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**Vehicles of resistance? –
Non-commercial carsharing and the socio-ecological mobility transition**

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Abstract (English)

Mobility is a core element of capitalist societies in which mobilities of humans, goods, data and ideas are keeping the process of capitalist expansion and accumulation afloat. However, the constant growth of mobilities, driven by a logic of faster, further and more, increasingly impairs the natural and social environment through a lack of livable space, air pollution, long-distance commuting and the escalating climate and ecological crisis. Therefore, a transition towards more social and ecological practices of mobility is urgently necessary.

My dissertation is about a part of this transition in relation to the mobility of people and investigates how practices of non-commercial carsharing are influencing local everyday mobility. I argue that practices of non-commercial carsharing are reconstituting hegemonic practices of automobility through processes of everyday resistance, re-embedding and commoning and thereby challenge capitalist mobilities in the realm of everyday life. Non-commercial carsharing reconstitutes practices of automobility along four aspects: 1) Redefine the meaning of the car and automobility, 2) Reembed automobility into its environmental context, 3) Foster sociality and 4) Change ownership relations.

First, for non-commercial carsharers the car becomes an object of utility and looses its role as status symbol. This changing role of the car brings the coercive aspects of automobility to the fore, which are widely recognized by non-commercial carsharers. Thereby, automobility isn't the sole means of liberation anymore, but rather ridden with ambivalence, fostering a reduction of its use.

Second, non-commercial carsharing is often practiced with an awareness of the environmental damages of automobility. Based on this awareness manifold critiques of automobility, mainstream sharing and consumerism become articulated. Thereby, automobility is re-embedded into its societal and environmental context and non-commercial carsharing emerges as counter-hegemonic practice.

Third, non-commercial carsharing fosters sociality and community. While automobility is mainly aligned with individual movement and atomization, non-commercial carsharing is characterized by collective care, responsibility and voluntary engagement. This works against individualizing tendencies of capitalism and also enables the collective alteration of the reproduction of social structures through collective agency.

Fourth and last, new ownership relations emerge from non-commercial carsharing. Through a process of commoning mobility individual car ownership is replaced by actual and perceived shared car ownership and collective management and care.

Overall these four aspects result in reducing car usage, and move mobility away from the hegemony of automobility and private car ownership. Through collectively altering the reproduction of hegemonic practices of automobility in a process of everyday resistance, re-embedding and commoning, non-commercial carsharing is challenging capitalist mobilities in the realm of everyday life. Thereby, non-commercial carsharing shows a potential pathway for a socio-ecological just and post-capitalist mobility transition.

Abstract (German)

Mobilität ist Kernelement kapitalistischer Gesellschaften, da die Mobilitäten von Menschen, Gütern, Daten und Ideen die Prozesse kapitalistischer Expansion und Akkumulation am Laufen halten. Allerdings gefährdet das konstante Wachstum dieser Mobilitäten, getrieben von einer Logik von „Schneller, Weiter, Mehr", immer mehr die natürliche und soziale Umwelt durch einen Mangel an Lebensraum, Luftverschmutzung, Fernpendeln und die eskalierende Klima- und ökologische Krise. Deshalb ist eine Wende in Richtung sozialer und ökologischer Mobilitätspraktiken dringend notwendig.

Meine Dissertation behandelt einen Teil dieser Wende und untersucht wie Praktiken des nicht-kommerziellen Autoteilens die lokale Alltagsmobilität beeinflussen. Ich argumentiere, dass Praktiken des nicht-kommerziellen Autoteilens hegemoniale Praktiken von Automobilität durch Prozesse von Alltagswiderstand, Wiedereinbettung und ‚Commoning' rekonstutuieren und damit kapitalistische Mobilitäten im Alltag entlang von vier Aspekten in Frage stellen: 1) Redefinition der Bedeutung des Autos und von Automobilität, 2) Wiedereinbetten von Automobilität in einen ökologischen Kontext, 3) Förderung von Sozialität und 4) Veränderung von Besitzverhältnissen.

Erstens, das Auto wird ein Gebrauchsgegenstand und verliert seine Rolle als Statussymbol. Die sich verändernde Rolle des Autos bringt zwanghafte Aspekte von Automobilität zum Vorschein, Automobilität ist somit nicht mehr reines Mittel der Befreiung, sondern durchzogen mit Ambivalenz, wodurch eine Minderung der Autobenutzung gefördert wird.

Zweitens, nicht-kommerzielles Autoteilen wird mit einem Bewusstsein für die Umweltschäden von Automobilität praktiziert. Hierauf basierend werden verschiedene Kritiken von Automobilität, kommerziellem Teilen und der Konsumgesellschaft artikuliert. Dadurch wird Automobilität in seinen sozialen und ökologischen Kontext wieder eingebettet und tritt als konter-hegemoniale Praktik zu Tage.

Drittens fördert nicht-kommerzielles Autoteilen Sozialität und Gemeinschaft. Während Automobilität normalerweise mit individueller Bewegung und Atomisierung einhergeht, ist nicht-kommerzielles Autoteilen durch kollektive Sorge, Verantwortung und ehrenamtliches Engagement geprägt. Dies arbeitet gegen individualisierende Tendenzen im Kapitalismus und ermöglicht gleichzeitig die kollektive Veränderung der Reproduktion von sozialen Strukturen durch kollektive Handlungsmacht.

Viertens und letztens entstehen durch nicht-kommerzielles Autoteilen neue Besitzverhältnisse. Durch einen Prozess des ‚Commoning' von Mobilität wird individueller Autobesitz durch wirklichen und empfundenen geteilten Autobesitz und kollektives Management und Sorge ersetzt.

Insgesamt resultieren diese vier Aspekte in einer Reduktion der Autonutzung und bewegen Mobilität weg von automobiler Hegemonie und privatem Autobesitz. Durch die kollektive Veränderung der Reproduktion hegemonialer Praktiken von Automobilität in Prozessen von Alltagswiderstand, Wiedereinbettung und ‚Commoning', stellt nicht-kommerzielles Autoteilen kapitalistische Mobilitäten im Alltag in Frage. Hiermit zeigt nicht-kommerzielles Autoteilen einen potentiellen Pfad für eine sozial-ökologische gerechte und postkapitalistische Mobilitätswende auf.

Vehicles of resistance?

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Luca Nitschke
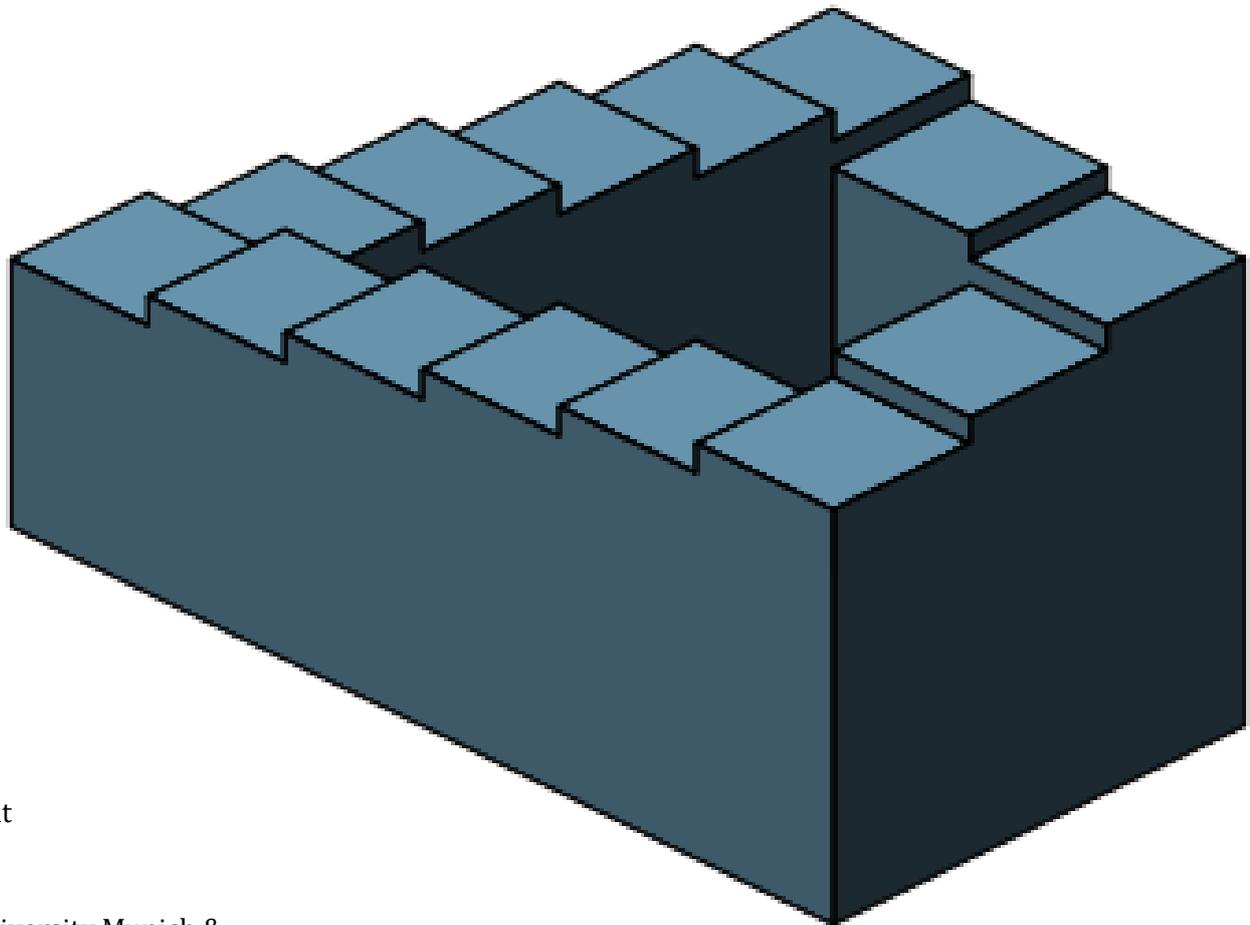
For Jaron

in the hope

to overcome

DMD KIU LIDT // TMO CIO LIS

Foreword & Acknowledgements

Maybe like every other PhD this has been a long and laborious work also because the personal attachment to it is higher than it will probably be to any other work in the next years. Thus, there would be much to say in a foreword. The idea to research non-commercial carsharing might seem rather strange, yet it emerges from a deep personal concern about the current state of affairs of the planet. While outside of science I face global issues collectively, but in writing a PhD-thesis one is utterly alone dealing with the shittyness of things. Thus, investigating something positive is what kept this research going from a personal standpoint. From a scientific standpoint this research was pushed by the fruitful perspective of utopia as a speculative guiding thread for research and society. As I will conclude, if nothing else, this work enabled the scientific investigation, detection and nurturing of the subtle processes of change in everyday life in order to build a counter-movement against capitalist domination, which thereby became part of the realm of the possible and a desirable future. Paraphrasing Erik Olin Wright, without a vision and the belief for a different future, there will be none.

Certainly, the sceptic in me is highly doubtful if my work is making any contribution to that, as there are so many obstacles in its way, which are completely out of my reach. Are we as society able to set aside our individual gain for the common good? Will we be able to re-embed processes and structures into places that enable the prioritization of the common good and a functioning ecosystem? How to change the individual gaze to a common one if we are sold and coopted into individuality 24/7? What to do if the things destroying our common good are the ones repairing us individually? Taking the current societal and political situation into account it seems utopian (in a negative, hopeless sense) to overcome sadness as the manifestation of capitalism in our lives.[1] The ones that profit from current exploitative and destructive practices are also the ones having the political power to change things. In relation to elected politicians there is a chance to form resistance, but how to battle undemocratic and somehow uncontrollable private companies or even socially produced hegemonic practices in everyday life?

And exactly this is where I hope this work actually makes a difference as it shows that not everything is hopeless and that crisis and deprivation also always contain the seeds for overcoming them, just as the impossible stairs always start where they end. In non-commercial carsharing I found a concrete example of how alienated everyday life bears the potential for its change by coming together and working on re-embedding what has been dis-embedded for way too long.

This work didn't come to being in isolation, but many people and institutions helped in making it possible. First of all, I want to thank the Hans-Böckler-Foundation for funding my research and many

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[1] This allegory is taken from the band Ja, Panik and their album DMD KIU LIDT.

things around it over three and a half years. Especially the contact to other PhDs through foundation meetings and working groups funded by the foundation was extremely helpful, scientifically and personally. In particular the working group with Laura, Azadeh and Ammel was a continuous source of inspiration and push to read. I also want to thank the other PhDs (and post-docs) of the mobil.LAB (Anthony, Cat, Christian, David, Dominic, Eriketti, Helen, Julia, Julie, Michael, and Tobias) for all the time we spent together talking about research, but also anything else. Munich would have been unbearably boring without 'mobil.LABing'. Certainly, thanks also goes to the many other people and institutions who helped in developing the ideas in this work, amongst them my supervisors Sven Kesselring and Sabine Maasen, my mentor Dennis Zuev, Klara and Tobi (to whom I attribute the title of this thesis), but also the other members of the MCTS, ZET and the Chair of Gebhard Wulfhorst, the Graduate School of TUM for a finalization grant and the numerous participants of conferences and workshops providing me with insightful feedback and support. Certainly, I also need to thank the participants of my research who willingly talked to me about their carsharing practices and personal motivations.

However, most of all I want and need to think Geraldine for enabling me to take the time I needed to finish writing this thesis. Without having a perspective and need for going on and finishing I might have planned my fieldwork for another while. Just as change needs a vision, finishing a PhD needs someone to point out that there is a time after it.

Munich, 21st of August 2020

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PART I
Introduction

Chapter One *Capitalist mobilities, sharing mobilities and the need for redefining the everyday*

1 Why non-commercial carsharing?

1.1 Car cleaning parties and fighting a virus

Rosa hands me a sponge and the spray for the removal of stains on fabrics: "Just look at the seats and if you see a stain, put some spray on it, leave it for a short while and then scrub it off with the sponge." *There are three cars with five seats each, so I quickly start my work. Everybody else attending the car cleaning party also is eagerly working on their task. Robert and his two kids are cleaning the windows, windshields and door seals. Rosa is removing coarse soiling from the wheel rims and the outer body. Rudi and Kurt are taking turns in vacuuming the interior space and everybody has an eye on the waiting line for the car wash, which is much busier than I expected for a sunny Saturday afternoon in early November. While cleaning cars can be perceived as a dull task, doing it together in a group and perhaps also because of the curious looks from the other people at the gas station, cleaning the cars feels like more than just a duty and attains meaning and even a tinge of fun.*

While cleaning, the attendees also use the time to inspect the condition of the cars. We find a few scratches that are new and discuss where they might be coming from: a door unintentionally slammed into some obstacle or carelessly loading or unloading something into or from the trunk. Nobody seems to be impressed by these marks and there is no search for somebody who can be held responsible. I personally wouldn't be upset about scratches in a car, but I am wondering a bit about the fact that the others also don't. Most people who care for thoroughly cleaning their car would also tend to care about the scratches, one would assume. But as nobody seems to really care I also decide not to and continue with cleaning the seats. After finding some more scratches Rudi provides an explanation for why they don't care about the scratches: "It is only an object of utility. This doesn't matter." *A car is supposed to be used to transport things and that necessarily leads to signs of usage, nothing to worry or to be upset about. Robert nods in agreement and adds:* "As long as the car is safe to drive, these beauty errors don't bother anybody. I certainly don't mind and if somebody does they should get their own car."

A further hot topic amongst the attendees is the new electric car they are going to get in the next months. It has been a long and heated debate about the benefits and drawbacks of an electric car, especially who is going to take care of unplugging it after use. Because of this, the purchase actually has been delayed multiple times. Rosa tells me that: "The city is going to help us now. During the week, someone from the administration will unplug and move the car and at the weekend the board is going to do it via an app. However, the city agreed to provide us with an extra charging station at their

expense." *I am happily surprised by those news, because albeit the city has always been in favor they never really made monetary contributions. This support feels like a good step forward in their effort.*

That Saturday, after cleaning three of the eight cars, the small group meets up in a café for some warm drinks, cake and ice cream – "the social and more important part of the cleaning party" *according to Rosa and the participants. At earlier parties the members managed to clean more than only three cars and due to the low participation Rosa is organizing an additional appointment on the next weekend for the shirkers ('Drückeberger'), also in order to clean the other five cars before the winter. When I asked Robert, if there is always only four people at these parties, he said:* "It depends. Sometimes there are more, sometimes nobody shows up. But it is a pity that there aren't more people. Well, I think they just don't get the social aspect of the carsharing association."

From this short vignette one might wonder now about a few different things: How did these people come together to clean cars? Who thinks car cleaning parties are fun and have meaning? Can a car, from the perspective of a declared car country, really only be an object of utility? Who doesn't care about beauty errors and why? Who owns these cars? In the following I'll start to provide answers to some of these questions, although most will be answered in detail in later parts of this book.

The people at the car cleaning party are brought together by being members of a carsharing association, which communally owns and uses cars and is one example of non-commercial sharing in mobility which this study is investigating. The car cleaning parties are a semi-regular event that Rosa, the head of the board of the *Carsharing Union Markt Schwaben*, is organizing. These 'parties' are an effort for maintaining the cars that are communally owned by the carsharing association. They are an addition to a mandatory cleaning by the members after longer or dirty uses and help to remove the dirt that occurs through regular but normal usage. During cleaning, as described above, the members also briefly inspect the cars to see if there are scratches that might go beyond normal usage, should have been declared or require repairing. They also check the anti-freeze protection, the windshield washer and some other things that could have been overlooked by the car-warden, who thoroughly checks the car once a month.

The participation in the cleaning parties and the position of the car-warden form part of the engagement of the association members in the carsharing association. Rosa makes it clear that engagement isn't necessary to be or become a member of the association. However, she emphasizes that the success and functioning of the association depends on this voluntary engagement by the members. Organizing these events, Rosa wants to lower the barriers for engagement and by connecting it with a social gathering she tries to make the cleaning parties more about meeting people than about cleaning a car, therefore emphasizing the social aspect in order to convince hesitating members. Certainly, the cleaning party, still by many is perceived as a duty, with only four of almost 100 members participating. However, it attained a tinge of fun not only for me, being in an unusual research situation, but judging from their faces and conversations

also for the members who attended. Surely, the coffee and cake afterwards helps. Thence, the parties not only have a functional meaning – cleaning and maintaining the cars – but also provide space and time for sociality between the association members, actively fostering a sense of community between them. Besides the carsharing association in Markt Schwaben this dissertation engages with eight other associations from the Greater Region of Munich, mainly through semi-structured interviews. I am going to further elaborate on the material role of the car as object of utility, the sociality between the members and engage with the effects these changes have for the system of automobility.

Another form of non-commercial carsharing is the sharing of a car between people without any formal organizational structures, e.g. between neighbors or friends, or as in the following vignette between an extended family.

Ivan hands me back my lighter and takes a short break for thinking: "That is why I think your project is so interesting. The low-tech or no-tech approach you have. Because I think that is one of the big problems: This ongoing zombification of everything. When I talk of zombification I mean that the technology owns us instead of the other way round. Sharing is also about our relation to technology." *Ivan talks like somebody who is profoundly convinced of what he is saying and albeit he is talking fast and uses concepts like 'zombification' as if everybody knows what it means, his arguments are concise and difficult to take apart. I met Ivan in the backyard of my flat in Munich, where his energy start-up had their offices. During several cigarettes we talked about what we are doing and it turns out that we not only have similar views of the world and political attitudes, but that he is also sharing an electric car with his father, his sister and his brother-in-law next door of his home in a village close to Munich and plans to extend this sharing to the cooperative housing he is going to move.*

"I didn't expect this to happen, but it was just so much fun and the technology just enabled it. It gave us a reason to de-motorize my father and we went from three 'burners' to one electric vehicle." *I am fascinated with Ivan's ideas around his carsharing practice. Albeit it wasn't a conscious decision from the start, he manages to incorporate the simple fact, that he is sharing a car with his extended family into a whole worldview of capitalist domination:* "The empire strikes back subtly. When you have to drive to work for long distances in order to pay for the long distances you are driving, then you are caught in a radical monopoly without even knowing it." *Sharing an electric car became his attempt to free himself from that radical monopoly and the virus of automobility, wherefore he is still happy every time he passes a gas station, because* "nobody likes to fuel a car."

Needless to say, not everybody who is privately sharing a car is as radical as Ivan. And not everybody includes it or even has a theory about capitalist society or knows Herman Knoflacher's book '*Virus Car*'. (Knoflacher 2009) Some people didn't even have an explicit motivation to share a car, they just needed one and somebody else offered one. Sharing a car between friends, neighbors or an extended family has many

faces and I will give an insight into private carsharing in Munich consisting of very different kinds of arrangements.

Actually, the first carsharing associations were born from private carsharing arrangements and in times when cars were a scarce resource the practice of sharing a car was a mundane aspect of everyday mobility. (Petersen 1995, Lovejoy and Handy 2011, Siegelbaum 2011) These social forms of mobility eroded with the continuous expansion of capitalist consumer society and the privately owned car and we are now struggling to revitalize them with buzzwords like '*sharing economy*' and '*smart mobility*'. What we most commonly have in mind today when we hear carsharing, e.g. *DriveNow*, *Car2Go, Flinkster* or *ZipCar* they all developed from the idea and practice of private carsharing. Since the first 'modern' carsharing practices in the late 1980s emerged out of the growing environmental movement, carsharing mainly became something done by associations, a few cooperatives, and smaller non-profit and for-profit companies, depending on the scale of the operations and the investors behind the effort. (Petersen 1995, Franke 2001) Also recently some companies discovered private carsharing, now called P2P-carsharing, and almost exclusively offer commercialized forms of sharing a private car, explicitly not breaking with the capitalist principles of profit, accumulation and their maximization.

Private carsharing taken out in a habitualized form amongst different households – not a car shared by one household of husband and wife – became something rare. The simple question of why this is so is one of the reasons that intrigued me to investigate this form of carsharing. Together with the carsharing associations, private carsharing opens a spectrum of motivations that goes from sheer utilitarianism to outright everyday resistance. All these motivations and the different forms of non-commercial carsharing however are united in the wish to transform mobility to something better individually and societally. I will explore the reasons for practicing non-commercial carsharing and elaborate on the critiques that carsharers voice and their larger implications. And albeit answering the question of why private carsharing is so rare nowadays is not an explicit part of the book, I hope to make a first step in reintroducing it into the range of what is considered possible and enable a rethinking of automobility as a commons and foster a socio-ecologically mobility transition. (Newman 2016, 2017, Sheller 2018)

After this short introduction into the two forms of non-commercial carsharing I investigate in this study, carsharing associations and private carsharing arrangements, I will introduce my topic from multiple angles. First, in the remainder of this section I will unfold the development of my research topic from a personal perspective and introduce my research question. Second, I will trace the development of my research from the theoretical perspective I take in this work. Following the theoretical introduction is a brief literature review on the 'sharing economy', sharing mobilities and carsharing, in which I position non-commercial carsharing on the side of potential emancipatory change. Lastly, I will unpack my research question by

presenting my analytical framework of the reconstitution of the political everyday. The very last section presents the structure of this book.

1.2 Introducing my research question

When I started my PhD research I wanted to research the different commercial sharing mobilities in Munich and their effects in spatial, social and environmental terms. This would have been a direct continuation from my Master thesis in which I investigated the development of Bikesharing in Munich, especially from a political and administrative perspective. (Nitschke 2015) Motivated and intrigued by concepts like *'Splintering Urbanism'* (Graham and Marvin 2001) and concerns for urban and mobility justice and the ongoing climate crisis I wanted to find out how which direction the implementation of sharing mobilities takes in Munich. Starting my literature review on sharing mobility, I also got more engaged with critical urban literature, especially Critical Urban Theory, (Brenner *et al.* 2012, Fujita 2013) Urban Political Ecology (Swyngedouw and Heynen 2003, Heynen *et al.* 2006, Angelo and Wachsmuth 2015) and Marxist literature, (Poulantzas 2000, Harvey 2006, Lefebvre 2014) ending up reading literature on utopias (Wright 2010, Oudenampsen and Robles-Durán 2011, Jacobsen and Tester 2012) and getting more and more dissatisfied with my initial research idea. It felt overly negative and the continuous realization that most sharing mobilities are deeply entrenched with the idea of endless growth of movement didn't provide me with motivation or an interesting research topic.

The idea to investigate non-commercial forms of sharing mobilities actually came through discussions with stipend-holders, from the foundation that provides the funding for my PhD, who were or have been sharing a car with friends or neighbors. My research topic from then on developed from a simplistic 'good' (non-commercial) vs. 'evil' (commercial) study into an exploratory study of non-commercial sharing mobilities in the Greater Region of Munich. I became interested in why people decide to conduct this form of carsharing, when other forms of carsharing are readily available (in the case of private carsharing) or owning a private car seems like the most natural and convenient thing to do (in the case of the carsharing associations). The literature on qualitative research in carsharing in general and especially in non-commercial carsharing is nearly non-existent, fortunately providing me with a research gap I could fill. (Franke 2001, Newman 2016, Dowling *et al.* 2018) Furthermore, as I will outline below, non-commercial carsharing is not only a gap in the literature, but also provides a special case to investigate the processes and mechanisms of sharing, because the need for accumulation and profit maximization is left aside. (Flyvbjerg 2006) Thence, with this work I investigate alternative, non-commercial practices of sharing mobilities, because these potentially critique and contest the capitalist logic inherent in the mobility system, bearing the potential for local change of the mobility system.

Exploring the process(es) of how this is taking place is the main analytical issue represented by my main research question: ***How are non-commercial carsharing practices influencing local change in the mobility***

system? As the issue of change has many facets I formulated four sub-questions, which I will introduce in section 4.3. Together with these sub-questions I want to shine a light on one empirical case of how change might take place locally within a capitalist mobilities system. I thereby contribute to a better understanding of how broader change could be facilitated on and from a local level and investigate the more subtle and mundane ways of how change can take place in the realm of everyday life. (Kaplan and Ross 1987)

The process of finding my research topic and question took more or less one and a half years, in which I spent a considerable time reading. Therefore, it certainly is more than coincidence that I read critical, Marxist and utopian literature and ended up researching an alternative to the private car with a non-commercial focus. Thus, the development of my research on non-commercial carsharing is interconnected with a specific theoretical and conceptual perspective.

2 Capitalism, mobilities and the necessity for change

In this section I will unfold the theoretical perspective that forms the basis for this study in three parts. First, I present a relational and processual conceptualization of the capitalist mode of production. Second, I will discuss its relation to mobilities and third point out the theoretical and practical need for a rethinking of this relationship. Embedding non-commercial carsharing in this theoretical perspective opens up its position as a *"'real utopia' […] that can inform our practical tasks of navigating a world of imperfect conditions for social change."* (Wright 2010, p. 6) I contend that non-commercial carsharing is an alternative to the capitalist mobilities outlined in this section and that practicing non-commercial carsharing can be part of the lever that pushes the capitalist mobility system beyond its current form.

2.1 The relational and processual character of the capitalist mode of production[2]

According to Marx, at the heart of the capitalist mode of production is the commodity. He defines a commodity as an external object satisfying human needs. The commodity presents itself as the unity of two opposites, as the relation of use-value and exchange-value, of quality and quantity. The use-value is the usefulness of a specific commodity, e.g. bread to eat, a car to drive. It is therefore the qualitative aspect of a commodity and can only be realized in use or consumption. The use-value of a commodity is *"the material bearer"* (Marx 1990, p. 126) of its exchange-value, which appears *"as the quantitative relation, the proportion, in which use-values of one kind exchange for use-values of another kind."* (ibid., p. 126) The exchange-value of a commodity is relative, depending on time and place and is, in contrast to the use-value, not intrinsic to the commodity. It depends on the value of the socially necessary labor time congealed in it in

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[2] The body of literature on capitalism and the capitalist mode of production is massive. For my dissertation, not having a far reaching Marxist background, I focused on the major work of Marx, Capital (Marx, 1990 [1887]) and made use of the extensive literature elaborating and continuing Marx's work, especially David Harvey's spatial approach. (Harvey 2006, 2007) His geographically attuned and inherently processual interpretation of Marxism provided me with a fitting framework for my dissertation.

the form of human labor in the abstract. Hence, the commodity, the basis of the capitalist mode of production is intrinsically relational.

Within the capitalist production of commodities, abstract labor, the source of exchange-value, dominates over concrete labor, which produces use-values. Hence, the exchange-value of a commodity, expressed in money as the universal equivalent, dominates over its utility for humans, its use-value. This domination originates in the process of exchange which, according to Marx, has two distinct formulas:

(1) Commodity (C) -> Money (M) -> Commodity (C)

(2) Money (M) -> Commodity (C) -> Money (M)

The first formula describes the circulation of commodities: *"selling in order to buy."* (ibid., p. 247) The second formula, *"buying in order to sell,"* (ibid., p. 248) describes how money is transformed into capital and therefore is the circulation of capital. This second process does not *"owe its content to any qualitative difference between its extremes, for they are both money, but solely to quantitative changes."* (ibid., p. 251) The *"determining purpose [of this circulation process] is therefore exchange-value,"* (ibid., p. 250) thus the 'creation' of more money than originally advanced. This movement, ending where it started, is inherently limitless, because *"the valorization of value takes place only within this constantly renewed movement."* (ibid., p. 253) And this is where the domination is situated. In the capitalist mode of production, the limitless valorization of value, the circulation of capital, dominates over the exchange of commodities as use-values. Certainly, part of an alternative mode of production is altering this domination. (Polanyi 2001) Additionally, money, the starting and end point of the circulation process, as the *"universal equivalent form of all other commodities [symbolizes] social power [in the hands] of private persons."* (Marx 1990, p. 230) Combined with the *"qualitative lack of limitation of money"* (ibid., p. 230) the drive for accumulation is increased limitlessly and *"the value-form of the commodity, money, has now become the self-sufficient purpose of the sale, owing to a social necessity [for growth] springing from the conditions of the process of circulation itself."* (ibid., p. 231)

Besides the limitlessness of the capitalist accumulation process and its destructive implications for the conditions of production, the second important point I want to make is Marx's conceptualization of capital as *"value in process"* (ibid., p. 256) within a process of circulation where it *"comes out […], enters into it again, preserves and multiplies itself within circulation, emerges from it with an increased size, and starts the same cycle again and again."* (ibid., p. 256) This is visible in the conceptualization of the commodity as reflecting *"the social relation of the producers to the sum total of labor as a social relation between objects"* (ibid., p. 165) and exchange-value only being expressive of value in an exchange relation. The formulas above of commodity exchange (C-M-C) and surplus accumulation (M-C-M) are both processes. Furthermore, it is easily visible how they are interlinked and interdependent on each other. Without the exchange of commodities, the realization of their value C-M, the accumulation of surplus-value and profit (M-C-M) is not possible. In

consequence, this means that produced commodities such as cars standing on the factory parking lot are not considered commodity capital unless they are being sold. Therefore, the capitalist mode of production is internally dependent on the movement of value, of capital put into (re)productive uses, whereby the capitalist system emerges as a perpetually reproducing, dynamic and complex process consisting of relations, flows and motion of labor power, commodities, surplus-value, capital and its own internal relations: *"The capitalist process of production, therefore, seen as a total, connected process, i.e. a process of reproduction, produces not only commodities, not only surplus-value, but it also produces and reproduces the capital-relation itself."* (ibid., p. 724)

One crucial implication of the processual and relational character is that when value is not in motion capital in its different forms (commodities, labor power and money capital) necessarily is devalued: *"Since capital is value in motion, value can remain value only by keeping in motion."* (Harvey 2006, p. 194) Within a constantly growing system, there is not only a demand for ever more inputs (labor power and raw materials), but there is also a continuous realization problem exercising a destabilizing tendency on the system: *"Accumulation for accumulation's sake is an unstable system in both the short and long run."* (Harvey 2006, p. 97) In case there are *'blocking points'* (Harvey 2007) in the circulation process, overaccumulation occurs, e.g. capital looking for investment in the production process, commodities waiting to be sold, credit money not being serviced, resulting in devaluation, wherefore *"the potentiality for crisis always lurks in the need perpetually to overcome the separation between the various 'moments' or 'phases' in the circulation of capital in time and space."* (Harvey 2006, p. 194) And while crisis and devaluation entail problems not only for the capitalist, they also open the window for change, turning the mobilities that enable the motion of capital into potential levers for systemic change.

In this brief introduction into Marxist theory I focused on the relational character of the commodity and the processual understanding of capitalist accumulation, resulting in an inherent tendency for limitless growth and a tendency for crisis but also the opportunity for change. I am aware that I omitted many of the complexities of Marx's analysis of capitalism, but a detailed representation and discussion clearly is beyond the scope of this work. My main point is that the capitalist mode of production should be conceptualized as a complex, dynamic, contradictory and perpetually moving processual relationship of (re)production. Its fundamental dependency on value in motion helps to understand the flexible stability of a crisis-prone and contradiction-laden system in its many different faces. The necessity for the realization of value and surplus-value from the sphere of production in the sphere of consumption, through the sphere of exchange is an essential and necessary characteristic of the capitalist mode of production. However, due to temporal and spatial differences within and between the spheres this need results in instability, a constant threat of crisis and a necessity for movement in its many different forms. It is here where non-commercial carsharing can

provide a lever as it entails a rethinking of the meanings of (auto)mobility, a significant change in mobility behavior and a collectivization of car ownership.

While Harvey already used the term 'mobilities' to describe different forms of movement, the concept only gained widespread attention and scientific acclamation through the work of John Urry and other mobilities scholars. (Urry 2000, 2007, Hannam *et al.* 2006, Harvey 2006, chap. 12) The entanglement of the capitalist mode of production with these corporeal, physical, imaginative, virtual and communicative mobilities, in short the means and meanings of movement, is the topic of the next sub-section.

2.2 Mobilities in Capitalism

This section will deal with the analysis of the relationship between mobilities and the capitalist mode of production, or in Marx's terms the position of *"the means of communication and transport"* (Marx 1990, p. 506) in capitalism. The large-scale and capitalist development of the means of communication and transport was enabled and made necessary through the development of large-scale machinery. (Marx 1990, chap. 15) Essentially, the means of transport and communication are connecting the sphere of production with the sphere of exchange. Furthermore, they are complex and capital-intensive infrastructural systems (e.g. telecommunications and transport networks, ports) and/or depend on these (e.g. cars, trains, planes, ships) and act as a sink for surplus-value in the form of spatial, temporal and spatio-temporal fixes. (Harvey 2001, Jessop 2006) At the same time, they facilitate, support and enable the perpetual development of capitalism through an increased and continuous accumulation of surplus-value. (Altvater 2016) Through their character of annihilating space through time, they also play an important role in what Harvey describes as time-space compression and therefore largely contribute to the conditions post-modern societies find themselves in. (Harvey 1990) Thence, the means of communication and transport take a special position in a capitalist society as they are connecting and facilitating the different parts of the capitalist system. Therefore, Schwedes (2017) conceptualizes transport as 'lubricant' of a liquid modernity in capitalist societies, where it serves as *"the medium of capitalist socialization. […] The transport system cannot be understood as societal subsystem, rather it is the basic structure of capitalist societies. Transport interweaves the capitalist societies and is the lubricant of an increasing liquid modernity."* (p. 16; author's translation) Thus, I argue that the concept of mobilities much better represents the role Marx attributed to the means of communication and transport in the first place.

The term and concept of mobilities emerged to emphasize the need for a *'mobile sociology'* to investigate society from the perspective of movement, as Urry argued that society is at least as much constituted through movement and relationships as it is through place. (Urry 2000, Spinney *et al.* 2015) This reconceptualization emerged as *'the new mobilities paradigm'* (Hannam *et al.* 2006) defining a discipline working on the corporeal, physical, imaginative, virtual and communicative mobilities and *"their complex combinations that together make possible the institutions and practices of social life and its spatial practices."* (Sheller 2017, p.

7) Thus, mobilities are more than just transport. (Featherstone *et al.* 2005, Cresswell 2006, Sheller and Urry 2006, Urry 2007) Mobilities emphasizes connections and relationships through different means with different meanings, insists on the complexity of social life, the influence of unintended consequences, "*advocates for a realist relational ontology […] of the co-constitution of subjects, spaces, and meanings*" (Sheller 2014, p. 2f) and at the same time acknowledges immobilities as necessary reflection of an increasingly mobile world. (Cass *et al.* 2005, Larsen *et al.* 2006, Urry 2007, Uteng and Cresswell 2008, Jensen 2011, Manderscheid 2014, Jensen *et al.* 2015, Birtchnell 2016, Endres *et al.* 2016, Freudendal-Pedersen *et al.* 2016, Kannisto 2016, Sheller and Urry 2016)

As concluded from the last section, the capitalist mode of production has an inherent necessity for motion, connection, integration and movement. This need is not exhausted in the plain transport of people, commodities and raw materials but further requires the digital and virtual communication between people, companies and countries and the imaginative mobility of ideas and meanings in order to establish justifications and cultural hegemony: "*So self-evident is it that there is no need to stress the way that significant development in the technical mechanisms of communication and transport has stimulated the connexionist imagination [of contemporary capitalism].*" (Boltanski and Chiapello 2005, p. 140) Capitalism understood as a process and capital as value in motion bring utmost attention to how these mobilities are organized and assured. Harvey, following Marx, argues that "*spatial integration – the linking of commodity production in different locations through exchange – is necessary if value is to become the social form of abstract labor.*" (Harvey 2006, p. 375, see also Altvater 2016) This puts the need for spatial integration through mobilities and therefore mobilities themselves at the heart of the capitalist accumulation process. I further argue that mobilities also play a vital role in establishing temporal, spatial and ideological integration necessary for the continuous accumulation of capital and its integration with the state and society. (Poulantzas 2000, Boltanski and Chiapello 2005) Simply think about how the expansion of railways enabled and actually created the necessity for a coordinated global time, (Schivelbusch 2000) how the means of communication (e.g. newspapers, telephones, internet) help in spreading and maintaining capitalist ideology and how a lockdown and restriction of mobility due to a global pandemic emerges in a global crisis.

According to Harvey, following a Marxian conception of mobility, "*capital can move as commodities, as money, or as a labor process.*" (Harvey 2006, p. 376) A complete theory of the role of mobilities in capitalism is beyond the space of this work, wherefore I will only briefly focus on the mobility of capital in the form of commodities and labor.

The circulation of capital in commodity form creates the need for continuous circulation in a specific time, which is assured through a sophisticated transport system organized around urban centers, which developed and are developing due to the tendencies for agglomeration inherent within capitalist

development. (Harvey 2006, Smith 2008) In the circulation of commodities speed of movement is a decisive factor:

> *"'Spatial distance' then reduces itself to time because 'the important thing is not the market's distance in space but the speed with which it can be reached'. […] Capital, [Marx] writes, must 'strive to tear down every spatial barrier to…exchange, and conquer the whole earth for its market', it must 'annihilate this space with time' in order to reduce the turnover time of capital to 'the twinkling of an eye'."* (Harvey 2006, p. 377, quotations from Marx (1973): *Grundrisse*)

Schwedes attests the constant need for acceleration of transport to this importance of speed and turnover time, often referred to as time-space-compression, with the adverse effect of growing individualization and atomization of social life. (Beck 1986, Harvey 1990, Bauman 2000, Boltanski and Chiapello 2005, Sennett 2006, Kesselring 2008) Lastly, and also a more obvious point, the expansion of the production of commodities makes the expansion of transport an absolute necessity. (Marx 1990, Schwedes 2017)

The mobility of labor power is more complex, as there exists a tension between the requirements of capital and the needs of the laborer as *"they are forced into curious patterns of struggle and compromise over the geographical mobility of labour."* (Harvey 2006, p. 385) The necessary requirements of capital for the mobility of labor power are that the laborer is indifferent to the type of work he/she is doing and that he/she can freely move between locations:

> *"The versatility and geographical mobility of labour power as well as the 'indifference' of workers to the content of their work are essential to the 'fluidity of capital'. […] The more mobile the labourer, the more easily capital can adopt new labour processes and take advantage of superior locations."* (Harvey 2006, p. 381)

This, essentially, requires not only a labor process without the need for (highly) skilled labor but also the willingness and ability on the side of the laborer to constantly move between different locations as well as a free labor market. Already now, we see limits and barriers to the necessary free mobility of labor power, because the needs of individual capitalists, e.g. a constant and specifically skilled labor force, and the need for a local "*industrial reserve army*" (Marx 1990, p. 788) necessarily lead to constraining the free mobility of the laborer. However, labor power must also be conceived of as the laborer and therefore as a human subject with the ability to make decisions based on his/her own reasoning and needs for social reproduction and coherence: (Sennett 1998, 2006, Sayer 2011, Manderscheid 2014, Addie 2015)

> *"Free individual mobility may not be consistent with the sustenance of appropriate mechanism of social reproduction. Marx observed that it is typically destructive of traditional ways of life and that it necessarily fragments and undermines the social cohesion of the family and the community."* (Harvey 2006, p. 383)

Therefore, free mobility from the perspective of the laborer can be perceived as 'forced mobility', emphasizing its potentially alienating character through incapacitating humans to decide on their mobility needs. (Schwedes 2017) Thence, *"the geographical mobility of capital and labour is not an unambiguous affair"* (Harvey 2006, p. 385) and *"dissolves into a mess of contradictory requirements."* (Harvey 2006, p. 382) While the laborer is forced to sell their labor power as a commodity in order to live and is thereby dominated by the mobility necessities of capital, the immobility of labor power can actively alter the accumulation process through struggle and resistance: *"Both capital and labour have rights to move, and between two rights force decides*." (Harvey 2006, p. 385)

Thus, each of the mobilities of capital possess their own specific needs. The mobility of commodities depends on the annihilation of space through time. The mobility of labor power is an *'ambiguous affair'* of equal rights between capital and labor and highly contradictory in its own terms. The not discussed mobility of money capital depends on the development of the means of communication and requires freedom from any *"material spatial constraints."* (Harvey 2006, p. 386) Unfortunately, Harvey omits the imaginative and ideological mobilities necessary for temporal and ideological integration of the capitalist mode of production. However, his partial analysis already includes various forms of mobilities and can be used for the further analysis of mobilities under capitalism.

Overall, the spatial and temporal expansion of capitalist production and the continuous accumulation of surplus value *necessarily* require an increase in the mobility of all forms of capital. More commodities need more transport to realize the value and surplus value embedded in them within the necessary turnover time. Labor power needs to be able to move between different labor processes to guarantee a continuous production, while it also needs to remain relatively fixed to sustain its reproduction. And with a growing demand for labor power more labor power needs to fulfill these requirements. Furthermore, more money capital needs ever more sophisticated means of communication and information to move between different sources of surplus value and find new possibilities for its profitable application. Schwedes (2017) therefore assesses transport as being driven by capitalist accumulation. However, I argue that mobilities in general are conditioned, while also driving the accumulation process, as visible in the relationship between road infrastructure and car traffic. (Duranton and Turner 2011)

This is particularly visible in the unevenness of current mobilities. Mobilities and other scholars emphasize immobilities (human and non-human) as a *necessary* reflection of an increasingly mobile world, sometimes forced and sometimes chosen: (Hannam *et al.* 2006, Adey 2010, Urry 2012, Endres *et al.* 2016, Sheller 2016) *"Some people's immobility is necessary for other people's mobility."* (Boltanski and Chiapello 2005, p. 362) Hence, we face the thorny problem of mobilities being *necessarily* uneven. Take for example, the highly mobile lives of truck-drivers, serving our sedentary consumptions needs or stationary service staff at airports enabling high-carbon long-distance mobility. From a Marxist perspective the necessity of this

unevenness becomes clear. Neil Smith described *"uneven development [as] social inequality blazoned into the geographical landscape, and it is simultaneously the exploitation of that geographical unevenness for certain socially determined ends."* (Smith 2008, p. 206) The theory of uneven development emphasizes how the concentration and centralization of capital further develops, produces and reproduces the needs of limitless accumulation, while creating a "*tension between geographical concentration of production on the one hand and territorial specialization and dispersal on the other."* (Harvey 2006, p. 392) Mobilities play an essential role in stabilizing this tension through facilitating and enabling spatial integration and continuous mobility of capital, which necessarily results in unevenness within the mobilities themselves. (Harvey 2006, chap. 12, Smith 2008) Additionally, uneven development *"cannot be understood independently of the technological dynamism associated with the accumulation of capital,"* (Harvey 2006, p. 393) wherefore the continued expansion of the means of transport and communication must substantially contribute to the destabilization of this tension in the first place. Essentially, uneven mobility in its different forms between classes, genders, generations or societies is also a result of and a *necessary* condition for the inherently uneven accumulation process of capital. Thus, mobilities are condition *and* result of the capitalist accumulation process at the same time and are ridden with a distinct logic: faster is always better, further is always better, more is always better.

To summarize, I understand and describe the relationship between capitalist development and mobilities as dialectic and contradictive. It is dialectic in the sense that capitalist development and mobilities are dependent on each other as two distinct parts of a unity, but they are further mutually reinforcing and (re)producing each other. The contradictive nature of the relationship becomes evident when analyzing mobilities from the perspective of the second contradiction of capitalism, as I will elaborate in the next section. (O'Connor 1988) As drastically visible in congested streets, the growth and development of mobility impairs its own production conditions and inherently creates its own limits. However, emergent from and embedded in this contradictive relationship is a theoretical need and practical tendency for changing the contemporary relationship between mobilities and capitalism towards alternative pathways such as non-commercial carsharing.

2.3 The necessity for change

The second contradiction of capitalism

The theoretical limitlessness of the capitalist accumulation process has manifold implications, which have been discussed extensively in Marxist literature amongst other things as contradictions and inherent crisis tendency. (Harvey 2014, Naess and Price 2016) Here I want to focus on its implications on societies' relationship with nature and the natural environment, conceptualized as the second contradiction of

capitalism.[3] (O'Connor 1988, 1991, Foster 1992) According to Marx, nature is the basis of human life itself as it enables labor as "*condition of human existence*" (Marx 1990, p. 133) in a metabolic relationship "*between man [sic] and nature,*" (ibid., p. 133) in which humans "*confront the materials of nature as a force of nature.*" (ibid., p. 283) He regarded humans as a dialectic part of nature where humans, through changing external nature, change their own nature, wherefore labor is seen as the "*appropriation of what exists in nature for the requirements of man.*" (ibid., p. 290; see also Harvey 2006, p. 100) However, in the context of the capitalist mode of production nature is isolated from labor to include it as "*vital part of the utopian concept of a market economy*" (Polanyi 2001, p. 187) and therefore is treated as a "*fictitious commodity.*" (Polanyi 2001, p. 75) Thence, "*nature is necessarily viewed by capital […] as nothing more than a vast store of potential use values […] that can be used directly or indirectly (through technologies) in the production and realization of commodity values*" (Harvey 2014, p. 250) by ways of monetization, capitalization and commercialization for commodity exchange.

James O'Connor and other 'eco-socialists' argue that this capitalist relationship with nature should be regarded as the second contradiction of capitalism: "*The contradiction between capitalist production relations (and productive forces) and the conditions of capitalist production, or capitalist relations and forces of social reproduction.*" (1988, p. 14) Marx defined three kinds of production conditions being a) external physical conditions (e.g. the functionality of eco-systems, soil, air and water quality, etc.), b) personal conditions of production (physical and mental health of workers and human beings in general, work relations, etc.) and c) the communal, general conditions of social production (e.g. social capital, infrastructure, etc.), in short: "*Production conditions include commodified or capitalized materiality and sociality excluding commodity production, distribution, and exchange themselves.*" (O'Connor 1988, p. 15) Therefore, taking a broad perspective, also the deteriorating state of public infrastructure, congestion, work relations and the intoxication of the social environment are considered production conditions and therefore the forces of social reproduction. (De Angelis 2012)

Foster termed this contradiction '*absolute general law of environmental degradation*' resulting in "*a tendency toward the amassing of wealth at one pole and the accumulation of conditions of resource-depletion, pollution, species and habitat destruction, urban congestion, overpopulation and a deteriorating sociological life-environment (in short, degraded 'conditions of production') at the other*." (1992, p. 78f)

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[3] In traditional Marxism the main focus of analysis was (and is) the appropriation of surplus-value from the laborer by the capitalist, expressed in class relations and forming the basis for class struggle as the moving agent of history. These relations of production resolved in the formulation of the first (and for many main) contradiction of capitalism as "*the contradiction between capitalist productive forces and production relations.*" (O'Connor 1988, p. 14) In other words, the laborer socially produces surplus-value which is then privately realized, or rather appropriated, by the capitalist. This contradiction was and still is perceived as the core impetus for the future development of and path towards socialism with the working class as historic agent for the socialist revolution. For a further discussion of the main contradiction in (traditional) Marxism see Jossa (2014).

Likewise, Bookchin sees the development of capitalist production and the concomitant destruction of its ecological basis as the fundamental capitalist contradiction between *"unending growth and the desiccation of the natural environment."* (Bookchin 2015a, p. 6) Following Daly's (2007) argument of seeing the economic system as a subsystem of society and nature, Vetlesen drastically describes the consequences of this contradiction: "*Capital's distinct way of relying on nature takes the form of incessantly spoiling that nature in its intrinsic qualities and elements. For this reason, when capital destroys nature, it also destroys itself*." (2016, p. 215) To go into all the detrimental effects capitalist development had and has on the natural (and social) environment – e.g. the climate crisis, biodiversity loss, land depletion and social anxiety to name but a few – is not only beyond the scope of this work, but has also been done by many other scholars. (O'Connor 1998, Foster 1999, Bookchin 2006, Daly 2007, Jackson 2009, Martin 2009, Urry 2010, 2013, Magdoff and Foster 2011, Gorz 2012, Klein 2014, Mace *et al.* 2014, Perreault *et al.* 2015, Vetlesen 2015, Naess and Price 2016, Wallace-Wells 2019) Essentially, "*production, distribution, and consumption [in] the capitalist way, in a globalized mode, results in the world's natural resources being exploited at such pace and to such an extent that the resources in question are destroyed in their capacity to replenish."* (Vetlesen 2016, p. 212)

Although Marx probably underestimated the impact the capitalist accumulation process can have on nature and "*assumed that labor alone is living, and nature is not,*" (Vetlesen 2016, p. 221, citing Brennen 2000, p. 94) he still had a grasp of the fundamental danger capitalist development entails for society when claiming: *"Capitalist production, therefore, only develops the techniques and the degree of combination of the social process of production by simultaneously undermining the original sources of all wealth – the soil and the worker."* (Marx 1990, p. 638) Consistently, Karl Polanyi also saw this danger of capitalist market society where "*human society had become an accessory of the economic system*" (Polanyi 2001, p. 79) due to the fictitious commodification of land, labor and money. Because the fictitious commodities e.g. labor power, clean air, urban space, soil quality, etc. are mainly not fully capitalistically produced and therefore not capitalistically reproducible, they are threatened to be impaired by continuous capitalist development and exploitation and have to be "*protected against the ravages of this satanic mill*." (Polanyi 2001, p. 77) Otherwise, capitalist accumulation leads to their appropriation, exploitation and finally depletion, which brings forward a theoretical and practical need to overcome the second contradiction through collective struggle. (Yaka 2019)

Capitalist Mobilities and the second contradiction

Now let me turn to the appearance of the second contradiction within capitalist mobilities. Looking at mobilities from an 'eco-socialist' perspective and through the analytical frame of the second contradiction of capitalism reveals how the continuous growth of mobilities is *necessary* for a further capitalist development while contributing to the impairing of its own production conditions. Increasing levels of mobilities are *necessary* for capitalist development as they enable closer economic ties between cities, regions and

countries and the continued mobility of various forms of capital, especially commodities, labor time and money capital. To overcome distance in as little time as possible, the *"annihilation of space through time,"* (Marx 1973, p. 459) has been and continues to be a crucial factor for capitalist development in order to overcome local differences. (Smith 2008, Schwedes 2017) Additionally, they are a crucial factor for overcoming the spatial distances created between family, friends and significant others, which contradictory can at least partially be attributed to the ongoing spatial, functional and social division of labor through a growth of mobilities. (Sennett 1998, Boltanski and Chiapello 2005, Manderscheid 2014, Schwedes 2017) The advent of the car in the 20th century made driving long distances by car normal and further facilitated an excessive suburbanization and boosted capitalist development in the post-war decades through the production of the 'system of automobility'. (Urry 2004) Furthermore, despite the global outbreak of Covid-19, our contemporary society and its emergence are hard to imagine without frequent long-distance trips by plane for business, tourism and the transport of commodities. (Cwerner *et al.* 2009) Overall, it becomes clear how increasing levels of mobility and the continuous development of mobilities, also in the form of the internet and its mobile access, are imperative for the development of the contemporary capitalist market societies.

However, it is also clear that the conditions for social reproduction are negatively impacted. Only considering the effects on the global climate system by CO_2-emissions from transport, would be enough. According to the IPCC, at least 23 % of world-wide CO_2-emissions have their source in transportation of people and goods. (Sims *et al.* 2014) CO_2-emissions from transport are one of the few the sources that are not declining and are also not part of most climate action plans after the Paris agreement, in which international air travel was not even included. (European Commission 2014, Cohen *et al.* 2016) Taking into account that most of these emissions originate in the Global North makes our appropriation of mobility a prime cause of climate change. (Gössling and Upham 2009, Martin 2009, Gössling and Cohen 2014, Sheller 2018) More locally the physical and mental health effects through increased traffic in urban areas are also devastating. The negative effects or air pollution through nitrous oxides and particulate matter are constantly increasing and can be attributed to a significantly large part to fossil-fuel burning modes of transport. (Anenberg *et al.* 2017) The issue of urban congestion is also increasingly getting worse with grid-locked streets being the normal case. (Duranton and Turner 2011, Hensher 2018, Russo *et al.* 2019) Increasing work and residential mobility is at least partly responsible for weaker ties between people and a reduced local attachment, (Sennett 1998, Urry 2010) as rural (and urban) residents are forced into car dependence. (Mattioli *et al.* 2016, Mullen and Marsden 2016) Additionally, the environmental impact from internet use at home, at work or on the move is constantly rising, (Gombiner 2011, Maksimovic 2018) while the increased and excessive use of social media creates economies of attention and contributes to rising anxiety about self-identities. (Bauerlein 2011, Gössling and Stavrinidi 2016) All of these impacts are spatially and temporally

unevenly distributed amongst residents of the Global North and South and along intersectional lines of class, gender, race, ability and age resulting in the co-presence of the hyper-mobile high-carbon business elite and incarcerated refugees fleeing starvation or their sinking homes. (Uteng and Cresswell 2008, Brand and Wissen 2017, Sheller 2018)

There is enough evidence to state that increasing mobility demand incorporates its own limits through impairing its (re)production conditions. These (re)production conditions can be very concrete in terms of congestion, where the increase of cars in urban areas limits itself through the existing street capacity. In the concrete case of urban air pollution, increased mobility is already impairing its reproduction conditions through the premature death of urban residents. (Anenberg *et al.* 2017, Brand and Wissen 2017) But, they can also be impaired more abstractly like in the case of fossil-fuel based mobility, where the increasing appropriation of mobility at some point will limit the ability to literally reproduce ourselves and our mobility due to the effects of the escalating climate crisis. (Wallace-Wells 2019)

Let us take a step back from this bleak outlook. It is not the purpose here to decide about the rights and wrongs of this development. My intent here is also not to overemphasize the certainly apocalyptic and nihilistic side of global issues of capitalist mobilities. Quite the contrary. I want to draw attention to how the second contradiction is able to provide a framework for analyzing mobilities and stress how this fundamental contradiction, through its inherent bleakness, signposts the theoretical and practical necessity for change and a rethinking of societies' relationship to mobilities outside of capitalism's growth and concurrence logic of 'faster, further, more'. Current mobility futures are mainly based on corporate and political fantasies for ever faster, ever further, ever more and ever smarter mobility. (Jensen and Freudendal-Pedersen 2012) It is highly unclear if the counter-developments e.g. reduced car ownership amongst young people, sharing concepts, etc. show a trend away from fossil-fuel centered, hyper-mobile societies or will become co-opted into the self-reinforcing process of neoliberal capitalism. (Goodwin and Van Dender 2013, Martin 2016, Korstanje 2017) However, with transport growth and economic growth being generally seen as conditioning each other, thinking about alternative, non-capitalist, forms of transport and mobility is a prerequisite and a step towards substantial change in society. (Wright 2010, Altvater 2016, Sheller 2018)

Therefore, mobilities, having a central position in the reproduction of capitalist accumulation, provide a potential lever for changing the way capitalism reproduces itself through its mobilities. (Urry 2000, 2007, 2012, Camagni *et al.* 2002, Harvey 2006) While on one side the constant development of capitalist mobilities impairs its own production conditions in a material sense as described above; on the other side this impairment creates the need for a counter-movement for re-embedding capitalist mobilities into their social and ecological context, raising the question of how much mobilities are *socially necessary* for a socio-ecological and just mobility transition. (Polanyi 2001, Gibson-Graham *et al.* 2016, Brand and Wissen 2017, Sheller 2018, Waygood *et al.* 2019) And albeit substantial systemic change currently appears to be unlikely

on a global level, (Frase 2016, Urry 2016, Wainwright and Mann 2018) the issue of how bottom-up change can occur locally within a capitalist system of mobilities through altering its reproduction is the main interest of this study on non-commercial carsharing. (Harvey 2000, 2006, Pieterse 2008)

To sum up, my study is rooted in a conceptualization of the relationship between mobilities – the means and meanings of movement of any form – and the capitalist mode of production as the processual entanglement of uneven mobilities and immobilities on multiple scales from the local to the global. In this relationship mobilities (corporeal, communicational, ideological, etc.) act as result of and condition for the expansion of the capitalist mode of production and the accumulation process (e.g. airports, transoceanic fiber optic cables, flexibility). Mobilities thus are one of the central features of and essential for the capitalist mode of production: "*Since capital is value in motion, value can remain value only by keeping in motion.*" (Harvey 2006, p. 194) Mobilities of people, goods, data, thoughts and ideas have the role to integrate the spatially and temporally dispersed circulation and accumulation systems of different forms of capital (e.g. infrastructure, commodities, labor power, money, but also data, ideas and ideologies) while also assuring the mobility of capital within these separate circulation systems. (Boltanski and Chiapello 2005, Harvey 2006, chap. 12) This central position results in a distinct logic that is inherent to mobilities in a capitalist context: faster is always better, further is always better and more is always better. The logic of capitalist accumulation is therefore written into its mobilities and there exists a long lasting and persistent relationship between an increased economic activity in terms of gross domestic product (GDP) and mobility in terms of distance travelled (Sims *et al.* 2014, Schwedes 2017) and I argue there is evidence that this is also the case for other forms of mobilities, e.g. the movement of goods, data, ideas and ideologies. (Boltanski and Chiapello 2005, Sheller 2018)

Henceforth, with the constant growth of mobilities within a capitalist system comes a constant increase of the impacts of mobilities, such as air pollution, congestion, energy use, individualization, anxiety and the escalating climate crisis. From a theoretical viewpoint of ecological Marxism these negative consequences of mobilities increasingly contradict the limitations of the physical and social world and have the tendency to inhibit their own continued reproduction, which becomes expressed in struggles on their reproduction. (O'Connor 1988, 1998, Urry 2010, Gössling 2016) It is highly doubtful if every combustion engine can be replaced by an electric engine given the available resources, not even considering the anticipated increase in the demand for cars worldwide, rebound effects or the unbroken trend for a growing mobility consumption. (Chapman 2007, Font Vivanco *et al.* 2014, Gössling and Cohen 2014, Sims *et al.* 2014, IATA 2016, Marscheider-Weidemann *et al.* 2016, Wachter *et al.* 2017) In order to achieve a more just mobilities system and prevent or at least slow down climate catastrophe and social collapse, mobilities (and the capitalist system) require radical change. (Urry 2010, Cohen *et al.* 2016, Mattioli 2016, Brand and Wissen 2017, Haas 2018, O'Neill *et al.* 2018, Sheller 2018, Yaka 2019)

Thence, the main interest and empirical object of this study, non-commercial carsharing, is one example of how this radical change can occur bottom-up and locally within a capitalist mobilities system. The next section will contextually introduce non-commercial carsharing through outlining the scientific literature on the 'sharing economy', sharing mobilities and carsharing.

3 Sharing mobilities are caring mobilities? – The struggle and tension of the 'sharing economy'

Through the discussion and the excitement about the 'sharing economy', sharing mobilities experience a technology-fueled revival as 'mobility-as-a-service' where car companies act as service providers, albeit challenged by technology companies. (Firnkorn and Müller 2012, Canzler and Knie 2016) In this development, hitchhiking becomes on-demand ridesharing (*Uber*, *Lyft*, etc.) and a huge variety of vehicle-sharing (carsharing, bikesharing, scootersharing, etc.) emerge from their roots in the environmental (carsharing) and anarchist (bikesharing) movement. (Shaheen *et al.* 1998, 2010, Cohen and Kietzmann 2014) In this brief overview of the relevant scientific literature for my case of non-commercial carsharing I will first introduce the wider frame of the 'sharing economy', second outline the position of sharing mobilities in the current debate on the 'sharing economy' and third present relevant literature on carsharing, positioning non-commercial carsharing on the emancipatory side of the debate on the 'sharing economy'.

3.1 The 'sharing economy'

Since its first emergence as 'share economy' (Weitzman 1984, Nordhaus 1986, Lacivita and Pirog 1992) the meaning of the concept of the 'sharing economy' significantly shifted and today broadly describes *"emergent, often digitally mediated, means of enjoying, acquiring or exchanging goods, services, knowledge and experiences together with others."* (Davies *et al.* 2017, p. 210) Simplified and in my own words: the shared use of goods, services, assets or spaces within a systematic framework. This incorporates many different business models, institutions and lifestyles and there is a long lasting debate on how the 'sharing economy' actually could or should be defined. (Schor 2014, Viba 2014, Acquier *et al.* 2017, Davies *et al.* 2017, Murillo *et al.* 2017) Maybe first it should be said that the concept of sharing is not a new invention and is argued to be *"the most universal form of human economic behavior."* (Price 1975, p. 3) This broad understanding considers that we often live in shared flats, used to share horse carriages and food and that there is a long lasting form of collective ownership known as the commons. (Ostrom 1990, Belk 2010, McLaren and Agyemann 2015, Fjalland 2018) However, what is new about the contemporary 'sharing economy' is the systematic commodification of sharing and its provision that is often mediated between strangers through digital technologies. (Cohen and Kietzmann 2014, Slee 2015)

One pole of the discussion about the 'sharing economy' sees it as a part of the economy that is *"part of an even bigger shift from a production-oriented measurement system […] to a multidimensional notion of value that also takes into consideration the well-being of current and future generations"* (Botsman and

Rogers 2010, p. 184 f.) and considers the 'sharing economy' as *"fairer, lower-carbon, and more transparent, participatory, and socially-connected."* (Schor 2014, p. 1) Put bluntly, this pole of the discussion claims that sharing enables a better life through collaborative consumption. Through collaborative consumption the ecological impacts of consumerism are supposed to be reduced significantly, while new communities and social bonds emerge from sharing a flat, a car, a bike, a tool or anything else: (Botsman and Rogers 2010, Belk 2014, Viba 2014, Slee 2015, Acquier *et al.* 2017, Bradley and Pargman 2017, Murillo *et al.* 2017) *"There is potential in this sector for creating new businesses that allocate value more fairly, that are more democratically organized, that reduce eco-footprints, and that can bring people together in new ways."* (Schor 2014, p. 11)

On the other pole of this discussion the 'sharing economy' is regarded as a form of rampant neoliberal platform capitalism and an expression of accumulation by dispossession: (Kallis 2014, Bialski 2017, Srnicek 2017, Spinney and Lin 2018)

"The Sharing Economy is extending a harsh and deregulated free market into previously protected areas of our lives. The leading companies are now corporate juggernauts themselves, and are taking a more and more intrusive role in the exchanges they support to make their money and to maintain their brand." (Slee 2015, p. 15)

Critics of the 'sharing economy' claim, that while it might have the potentials outlined above it has to be put into perspective with the current ideological, political and economic framework. Thence, it has to be critically assessed if the 'sharing economy' is able to fulfill its promises. Multiple scholars have suggested that the original ideas of the 'sharing economy' are becoming co-opted into a neoliberal framework. (Theurl *et al.* 2015, Cockayne 2016, Martin 2016, Murillo *et al.* 2017) There is evidence suggesting that the mainstream and commercial application of these sharing practices is not the long awaited solution for a better life, but entails the reproduction of existing spatial, economic, social and ecological inequalities. (Martin 2016, Murillo *et al.* 2017) Often unregulated platforms such as *airbnb* or *Uber* substantially change the economy and the structure of a local society, with whole neighborhoods turning into unofficial holiday flats, reducing already scarce housing or commercial ridesharing threatening the livelihoods of informal transportation providers especially in the Global South and established taxi companies in cities of the Global North. (Isaac 2014, Pick and Dreher 2015, Rogers 2015, Slee 2015, Glöss *et al.* 2016, Frenken and Schor 2017, Schor 2017)

With this dissertation I will look into a part of the 'sharing economy' that scientifically hasn't been investigated so much and maybe is close to the initial hopes set into collaborative consumption as

"enabling people to realize the enormous benefits of access to products and services over ownership, and at the same time save money, space, and time; make new friends; and become active citizens once again[;] providing significant environmental benefits by increasing use efficiency, reducing waste,

encouraging the development of better products, and mopping up the surplus created by over-production and -consumption.” (Botsman and Rogers 2010, p. xiv)

Most parts of the 'sharing economy' have been criticized for being of a commercial nature and thereby highly influenced and co-opted by capital interests of profit maximization. And albeit most of these critiques admit the limitation of their accounts to the large and commercial parts of the 'sharing economy', explorations of the non-commercial 'sharing economy' are rare. (Bialski 2007, Picard and Buchberger 2013, Richardson 2015, Bradley and Pargman 2017, Fjalland 2018) I am therefore looking at an explicitly non-commercial form of sharing and investigate how taking the need for profit creation out of sharing influences practices of sharing and their potential for *“the deconstruction of ongoing practices of dominance.”* (Richardson 2015, p. 127) But first, I will continue this literature review with tracing the debate on the 'sharing economy' in the field of sharing mobilities and explicitly carsharing.

3.2 Sharing mobilities

The 'sharing economy' also entered the field of transport and mobility, where it is commonly referred to as smart mobility, collaborative mobility or sharing mobilities. (Beckmann and Brügger 2013, Viechnicki *et al.* 2015, Kesselring *et al.* 2020)

Smart mobility usually refers to forms of mobility, mostly transportation based, that are highly digitalized to supposedly enhance efficiency, which in many cases, especially in industry discourses includes sharing as part of a broader shift in mobility along the lines of electrification, automation and connectedness, known as CASE or ACES. (Okuda *et al.* 2012, Viechnicki *et al.* 2015, Benevolo *et al.* 2016, Lyons 2016, Brettell 2019) Collaborative mobility is a term that emerged in the early years of the 'sharing economy' and is conceptualized as the shared use of transportation vehicles and infrastructure, complementing the conventional transport options of private individual transport and public collective transport with public individual transport and private collective transport. (Beckmann 2013, Beckmann and Brügger 2013) In some understandings the term includes a different approach towards ownership, namely a communal ownership of the assets of mobility instead of private or state ownership, entailing cars and bikes, but also public transport or other assets of mobility and relates to the commons literature and the original framing of the 'sharing economy' as collaborative consumption. (Ostrom 1990, Botsman and Rogers 2010, Glover 2011, 2013, 2016) The term I will work with – sharing mobility or rather sharing mobilities – originates from the mobilities literature and includes other forms of movement than transport of people, namely digital, virtual and imaginary movement as well as the movement of goods and thereby emphasizes the interdependence of the transport system with other systems. (Urry 2007, Freudendal-Pedersen and Kesselring 2018, Kesselring *et al.* 2020)

In case one would have to single out an emblematic form of sharing mobilities it probably would be *Uber*. (Fleming *et al.* 2019, Rosenblat 2019) *Uber* is an example for something commonly known as ridesharing.

Also here it should be emphasized that ridesharing as such isn't something *Uber* invented. Practices that follow the same principle like hitchhiking or car-pooling for long distances have a long history and were continuously developed before the 'sharing economy' was discovered by commercial interests. (Belk 2010, Fjalland 2018) *Uber* was founded in 2009 and basically offers (shared) car rides through an app. While this sounds a lot like a more digital form of a normal taxi service, *Uber* is quite different. *Uber* doesn't own a single vehicle, didn't employ its drivers when it started and drivers didn't require a taxi license.[4] (Rosenblat 2019) The biggest difference, according to *Uber* itself, is that the rides are shared by connecting customers with similar routes into a single trip, wherefore *Uber* claims to actually reduce carbon emissions from individual car trips, declaring itself a green transport solution. Through this business model *Uber* collected staggering amounts of capital and became one of the most well-known symbols of the 'sharing economy', signifying a societal value-shift from ownership to usage. (Cohen and Kietzmann 2014) However, the history of *Uber* has many controversies around the working conditions of the drivers and the actual environmental benefits it creates. (Tcholakian 2017, Balding *et al.* 2018, Fleming *et al.* 2019) Another controversial example for commercialized sharing mobilities are bikesharing systems, which increasingly exist in many cities around the world. (Shaheen, Guzman, *et al.* 2012) Bikesharing has its roots in the anarchist scene of Amsterdam of the mid-1960s and came into global appearance when advertisement companies discovered the potential to combine a supposedly sustainable form of transportation with their interests in gaining advertisement space in cities. (Tironi 2014) In recent years sharing mobilities expanded to nearly every other vehicle, e.g. small and large electric scooters, e-bikes and cargobikes repeatedly invoking debates about their usefulness. (Shaheen and Chan 2016, Schellong *et al.* 2019, Stehlin *et al.* 2020)

Also sharing mobilities need to be situated within the controversies of the wider 'sharing economy', described as the *"paradox between being part of the capitalist economy [and] providing an alternative to the capitalist economy."* (Kesselring *et al.* 2020, p. 5) The hegemonic discourse around these 'new' practices of sharing mobilities is that they offer a solution (together with electrification, automation and connection) for contemporary (and future) mobility problems, e.g. congestion, environmental impact or an increased flexibility and accessibility for citizens. (Cohen and Kietzmann 2014, McLaren and Agyemann 2015, Viechnicki *et al.* 2015, Meyer and Shaheen 2017) Along the lines of this discourse sharing mobilities could be conceptualized as Do-It-Yourself means of mobility running on renewable energy facilitated by rapidly sinking capital costs and the digitalized spread of collaborative ownership. (Rifkin 2014) This is further grounded in a change in cultural preferences and attitudes, e.g. less carownership or a more sustainable mindset and an increasing awareness of societal boundaries in the 'mobile risk society', (Kesselring 2008, 2019) e.g. increased need for flexibility and increased uncertainty. All of these bring forward the need for more flexible and less

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[4] The drivers were self-employed and had their own vehicles, which after ongoing critique on the situation of the drivers changed. (Tcholakian 2017)

impacting approaches and technologies for movement of any form, whereby sharing mobilities provide *"an opportunity, and a responsibility, to establish new types of communities that can handle local/global responsibilities and transform them into positive visions for both cities and regions."* (Kesselring *et al.* 2020, p. 10)

However, most of the commercial sharing models are operating in a capitalist logic of growth and therefore potentially (re)produce the current unevenness of the mobility system. (Martin 2016, Murillo *et al.* 2017, Sheller 2018, Nikolaeva *et al.* 2019) It appears that the mainstream and commercial application of these sharing practices is not only a smart solution, but is also reproducing existing spatial, social and ecological inequalities and in some cases even worsens the situation, e.g. when *Uber* adds cars and miles driven to city streets, when free-floating car-sharing cars only replace 0.8 private cars increasing instead of reducing the number of cars in the city or when bikesharing systems are predominantly used by male, heterosexual, white, middle-class and highly-educated persons. (Ricci 2015, Zhao *et al.* 2015, Rio 2016, Balding *et al.* 2018, Hülsmann *et al.* 2018) Along this line, sharing mobilities could be conceptualized as a reaction to an overaccumulation of mobility within society or parts of it. In analogy to Whitehead (2013), sharing mobilities thus provide new circuits for and forms of accumulation, offering an increased possibility for mobility and therefore an increasing accumulation of mobility beyond current barriers of street capacity, etc. Thence, sharing mobilities provide a spatial fix, or rather mobility fix, to current blocking points in the accumulation of capital through urban mobility. (Harvey 2001, Spinney 2016) In order for mobile capital to expand it needs a fixed base, comparable to an airport, requiring further landings strips in order to grow. The new infrastructures and mobility opportunities in connection with sharing mobilities can thus be interpreted as a form of fixed capital for the facilitation of more mobility and congruent accumulation. (Graham and Marvin 2001, Tironi 2014, Ricci 2015) Furthermore, the application of sharing mobilities produces an immense amount of location and movement data of its users, which can be and is used for commercial purposes, further increasing capital accumulation through digital mobilities. (Spinney 2016, Spinney and Lin 2018)

Albeit their role in providing a mobility fix for capital and facilitating further accumulation by dispossession, sharing mobilities at least bear the potential to reduce the negative impacts of mobility on our lives and planet. (Richardson 2015, Ince and Hall 2017, Kesselring *et al.* 2020) Essentially sharing mobilities are caught between two poles. On one hand, the neoliberal capitalist co-option for further accumulation through individualization and commodification that are unevenly available spatially and socially – as in luxury free-floating carsharing and non-regulated taxi services. On the other hand, the emancipatory potential for social and cultural change through fostering inclusion and cohesion, undermining ownership relations and saving resources and emissions – as in hitchhiking, non-commercial car-pooling and non-profit carsharing. (Table 1.1)

Table 1.1: Aspects of the emancipatory potential and neoliberal co-option of sharing mobilities.

Emancipatory potential	Neoliberal co-option
+ Environmental impact reduction by less individual use and ownership	- Atomization by more individualized services in loose commercial networks
+ Social cohesion through more social interaction	- Increase in social inequality along questions of accessibility (e.g. luxury services, spatial distribution)
+ Emancipation by self-determination in the 'Commons'	- 'Mobility fix' for continued capitalist accumulation

The concrete actualization of sharing mobilities, however, depends on the political, cultural, social and organizational framework and context and will be decided in a power struggle and thereby remains an open empirical and theoretical question: (Richardson 2015)

"Ultimately, the ability of the new sharing practices to help catalyze a social transition may also depend on the form these initiatives take around the world. […] Technologies are only as good as the political and social context in which they are employed. Software, crowdsourcing, and the information commons give us powerful tools for building social solidarity, democracy, and sustainability. Now our task is to build a movement to harness that power." (Schor 2014, p. 12)

As carsharing is the empirical object of my dissertation, the last part of this brief literature review will present relevant research on carsharing and position it within the outlined struggle for and tension of the 'sharing economy'.

3.3 Carsharing

Long before the 'sharing economy' became a relevant topic in public discourse and research, carsharing came into life. The first surge in proper carsharing organizations started in central Europe in the late 1980s and mid-1990s, although smaller research projects date back until the mid-1960s. (Petersen 1995) These small organizations were first organized as non-profit associations or research projects and after a few years further developed into non-profit or for-profit companies, mainly in the bigger cities. Having emerged from the environmental movement, most carsharing organizations of the early hours kept their environmental focus, remaining focused on reducing the number of cars on the streets through the shared usage of cars, thereby only growing slowly through mouth-to-mouth propaganda abstaining from aggressive advertising. (Shaheen *et al.* 1998, Franke 2001) The cases of non-commercial carsharing I am investigating in this work are closest to these initial carsharing projects and companies, clearly visible in their statutes. (Vaterstettener Auto-Teiler 1993, Carsharing Erding e.V. 2015)

Until the early 2010s, carsharing was solely characterized by these initial carsharing organizations. They functioned as stationary carsharing systems, in which a car had a fixed parking space and had to be picked

up and brought back to this parking space for every usage. Booking of the cars at the beginning was done via telephone and answering machines and with the diffusion of the internet was moved to online booking platforms. In this time carsharing experienced a slow but steady growth, especially in Germany and Switzerland with around 400,000 users in Europe at the beginning of 2009. (Loose 2010)

With the founding of *Car2Go* in 2009 and *DriveNow* in 2011 and the introduction of free-floating carsharing, the German carsharing market changed drastically. In free-floating carsharing it isn't necessary anymore to return the carsharing car to a specific location, but the car is left within a specific service area, mostly in urban centers. Suddenly, being part of the hype on the 'sharing economy', carsharing gained widespread public, political and media attention. In early 2020 free-floating carsharing in Germany had 1.6 million users sharing 13,400 cars, around double of the 710,000 members of stationary carsharing sharing 12,000 cars. (Bundesverband CarSharing e.V. 2020)

While the environmental, economic and social benefits of carsharing are in principle undisputed, they depend to a large extent on the specific context of how carsharing is organized and put into practice. (Shaheen, Mallery, *et al.* 2012, Shaheen and Cohen 2013, Chen and Kockelman 2016) Generally, carsharing is cheaper than a privately owned car up until a yearly driving distance of approx. 10,000 km. (Litman 2000, Loose 2016, Sommer *et al.* 2016) However, this depends on the prices of the respective carsharing offer, which are considerably lower for stationary carsharing than for free-floating carsharing. The environmental benefits of carsharing can be found in the replacement of private vehicles, reducing the overall number of cars on the streets, and a reduction in kilometers driven by the individual carsharing user, due to a replacement of car trips with public transport and bicycle trips. (Martin and Shaheen 2011, Loose 2016, Nehrke 2016, Sommer *et al.* 2016) Again, these benefits largely depend on the type of carsharing and its practical application. For stationary carsharing the average replacement rate of private car is 1:10, meaning that one carsharing car replaces around ten private cars. However, this number ranges considerably between three and 20 depending on the spatial and social context. (Petersen 1995, Giesel and Nobis 2016, Nehrke 2016, WiMobil 2016, Hülsmann *et al.* 2018) In free-floating carsharing it was even found that users not only have a higher than average vehicle ownership, but also replace their private cars less frequently, potentially resulting in more than less cars on the streets through the added free-floating cars. (Hülsmann *et al.* 2018)

The same goes for the reduction in car distance travelled. (Litman 2000, Martin and Shaheen 2011, Rabbitt and Ghosh 2013, Sioui *et al.* 2013) Here the reduction depends to a large extent on the replacement of a private car through carsharing. In case households use carsharing as a second car and still own a private car, the reduction in distance travelled is much smaller. As this is the case in many free-floating carsharing offers, the environmental benefits are likely to be much smaller, especially as trips with free-floating carsharing cars tend to be in central urban areas and replace public transport or cycling more often than trips with stationary carsharing. (Kopp *et al.* 2015, Nehrke 2016, Nijland and van Meerkerk 2017, Hülsmann *et al.*

2018) Furthermore, the membership of free-floating carsharing is less diverse than in stationary carsharing, concentrating on young, male, well-educated people with an above-average income in central urban areas, potentially excluding low-income and rural residents. (Kim 2015, Mueller *et al.* 2015, Becker *et al.* 2017)

Thence, also carsharing needs to be positioned within the two poles of the 'sharing economy'. On one side, carsharing entails the danger of making the car as mode of transport even more attractive in urban centers and thereby fastening the grip of the system of automobility. Without doubt, carsharing can significantly reduce the number of vehicles and car-kilometers driven. However, it appears, that these effects become smaller with contemporary free-floating applications, as they are not fit for replacing the private car in its entirety, e.g. car usage longer than a few hours and stay within the logic of capitalist mobilities. On the other side, carsharing, especially in its stationary form, challenges core elements of the system of automobility, such as the private ownership of cars and its almost exclusive usage. (Dowling and Simpson 2013, Dowling *et al.* 2018) In this case carsharing makes the benefits of the car as mode of transport available without the need to own a car and the negative effects attached to it, whereby it *"has the potential to challenge the hegemony of the private car primarily because it draws on many of the skills, images and materials currently associated with car use."* (Kent and Dowling 2013, p. 87)

Exactly this potential of carsharing in general and non-commercial carsharing in specific to challenge automobility through a redefinition of its hegemonic everyday practices is what I am going to explore in depth with this study. In the following section I will unpack the analytical framework and the research questions guiding this exploration.

4 Analytical framework: Unpacking the research questions

In this section I will present my analytical framework and unpack my research questions for investigating non-commercial carsharing. Based on the above theoretical introduction and the literature review I will first position non-commercial carsharing as a local case of change in the system of automobility. Second, I will provide a discussion of the concepts of everyday resistance, re-embedding and commoning, which together form the analytical framework of 'redefining the political everyday'. Lastly, grounded in the theoretical introduction and the contextual and analytical framework, I will present the research questions guiding the following empirical chapters and the discussion.

4.1 Non-commercial carsharing as local case of change in the system of automobility

My study focuses on the physical everyday mobility of people, everyday practices of automobility and specifically on carsharing practices. The essential aspects in the relation between hegemonic automobility and carsharing are changes in ownership relations and a shift in car usage to other modes of transport. Further aspects that I investigate in this study are the reasons and motivations people have for practicing carsharing and a possible sense of community which develops around non-commercial carsharers. Everyday

practices of automobility and private car ownership are far from the only problematic practice within contemporary capitalist mobilities. (Cohen *et al.* 2016) However, the private ownership of cars is the essential piece of the '*system of automobility.*' (Urry 2004) In turn, the system of automobility with the car as it central material object is an important part of modern capitalist societies' economic and social processes, institutions and identities and contributes significantly to ecological damages and weakening social relations. (Sennett 1998, Boltanski and Chiapello 2005, Featherstone *et al.* 2005, Böhm *et al.* 2006, Paterson 2007, Conley and McLaren 2009a, Dennis and Urry 2009, Gorz 2009, Doughty and Murray 2016)

A recent development in relation to everyday personal mobility is the formalization and commercialization of sharing mobilities. (Kesselring *et al.* 2020) As explained above these sharing mobilities bear the potential for emancipatory change but also the danger of increased accumulation by dispossession. Following the theoretical contextualization of capitalist mobilities, one reason for the capitalist co-option of sharing mobilities also lies in the fact that commercialized sharing mobilities don't break with the underlying logic of mobilities in capitalism of 'faster, further, more'. Following a capitalist logic more mobilities are not only always better because they enable accumulation, but more mobilities also become a necessity and condition for further accumulation. (Boltanski and Chiapello 2005, Harvey 2006, Essebo and Baeten 2012, Spinney 2016, Korstanje 2017) Henceforth, in case the capitalist logic of mobilities, which favors quantity over quality, more over less and exchange-value over use-value, is not overcome in sharing mobilities, uneven mobilities and immobilities will not only keep increasing, but will also continue (re)producing ecological and social inequalities from the local to the global level. (Sheller 2018, Nikolaeva *et al.* 2019)

Nevertheless, through opening the discussion about reconstituting ownership, sharing mobilities offer the potential to debate, negotiate and reconstitute the broader everyday practices, meanings and logics behind the privately owned car in specific and (auto)mobilities in general. (Dowling *et al.* 2018) This potential reconstitution of everyday practices and interdependent meanings through sharing mobilities is also where I locate my study on non-commercial carsharing. Essentially, I investigate how non-commercial carsharing is redefining hegemonic practices of (auto)mobility. I hypothesize that non-commercial carsharing is a form of local (and sometimes political) action contesting, critiquing and altering the system of automobility and its hegemonic practices, especially private car ownership. Thereby, it also potentially bears the seed for the contestation of capitalist mobilities more generally, provides an anchor for sociality for individuals and communities and enhances their ability to resist an ecologically and socially unsustainable mobilities system.

To support this argument empirically, I will provide an in-depth qualitative account of non-commercial carsharing in the Greater Region of Munich. I am aware that my study is empirically grounded in a specific locality, the Greater Region of Munich, which not only limits its generalizability but also its potential effects on the global level where automobile hegemony is located. However, I argue that the local bears significant importance for the global as much as it does in reverse:

"If we take the often cited mantra, that the local and the global are co-constituting themselves, seriously, then local places are not simply victims and not only just the products of the global. Quite the opposite: They are also the moments, through which the global is constituted, which means, that there isn't only the global construction of the 'local', but also the local construction of the 'global'. [This means that] local politics and local action re-act on the further reaching global mechanisms." (Massey 2006, p. 29 f., author's translation)

It is only on the local level and in everyday practices that *'real utopias'* (Wright 2010) can emerge, which are able to fill and widen the cracks in the seemingly overwhelming global dominance of the capitalist system in general and hegemonic automobility in specific. (Harvey 2000, Gibson-Graham 2006, Chatterton 2016) As I will argue in the next sub-section, altering everyday life and its practices is the location at which new ideas and utopias emerge and unfold their potential to influence the social relations that reproduce social structures through the individual. (Kaplan and Ross 1987, Joseph 2002, 2003, Wright 2010, Levitas 2013, Pinder 2013, Lefebvre 2014) Thence, while the case of non-commercial carsharing I investigate in this study is bound to the local context, through the alteration of everyday practices and social relations between society and individuals on the local level and its interrelation with the global, it unfolds a potential to influence broader tendencies and mechanisms of hegemonic structures of automobility and capitalist mobilities.

4.2 Reconstituting the political everyday

In the previous sub-section I positioned non-commercial carsharing as a locally grounded case of change in the system of automobility with potential ramifications for hegemonic social structures of automobility and capitalist mobilities. Now I will detail the conceptual ideas and the analytical concepts I use to trace the alterations of everyday practices: everyday life and its politics, everyday resistance, re-embedding and commoning.

Everyday life and its politics

Before outlining the analytical concepts I use I present three conceptual points that underlie those. The first conceptual point is a concentration on everyday life and its practices, as these are the essence of most our lives and are the main material expression of hegemonic social structures on an individual level: (Pink 2012, Hui, Schatzki, *et al.* 2017)

"It is everyday life which measures and embodies the changes which take place 'somewere else', in the 'higher realms'. The human world is not defined simply by the historical, by culture, by totality or society as a whole, or by ideological and political superstructures. It is defined by this intermediate and mediating level: everyday life." (Lefebvre 2014, p. 339, emphasis in original)

Therefore *"the reproduction and transformation of social practices has implications for patterns of consumption and for institutions and infrastructures associated with them."* (Shove *et al.* 2012, p. 2) I want to make clear, that I don't follow a strict practice theoretical approach, as my analysis emerges from and builds on the individual non-commercial carsharers. The analysis of the materials, competences and meanings of the practices of non-commercial carsharing are certainly part of my study, however neither explicitly nor at the center of it. (Shove *et al.* 2009, 2012) Nevertheless, I share the basic assumption of practice theory, that social practices are an important, if not the most important aspect when considering processes of change as it is within and through social practices that social structures are reproduced and transformed by the individual. (Joseph 2003, Shove *et al.* 2012) Even more specific in the sphere of everyday life, highly structured through hegemonic practices, routines and habits, the potential for change always lurks around the corner through intended and unintended alterations of the constant repetition: (Cohen and Taylor 1978, de Certeau 1984, Pink 2012, Lefebvre 2014, Lilja and Vinthagen 2018)

"Even at its most degraded, however, the everyday harbors the possibility of its own transformation. […] It is in the midst of the utterly ordinary, in the space where the dominant relations of production are tirelessly and relentlessly reproduced, that we must look for utopian and political aspirations to crystallize." (Kaplan and Ross 1987, p. 3)

Thence, the focus of my study is to investigate how non-commercial carsharing is reconstituting the everyday practices of owning and using a car.

However, this understanding of everyday practices being central to processes of change requires a second conceptual point, which is a broader understanding of what is considered political. I hereby stand in a tradition of feminism where the private and the everyday is considered a political issue:

"Political action isn't only played out in the intended arenas, but the borders between politics and non-politics are fluid. […] But not only this, besides the social facts there is an everyday politics, which doesn't take shape institutionally, which takes place and can be verified outside all organization and constitutionalization." (Beck *et al.* 1999, p. 11 f., author's translation)

Broadening the understanding of what is considered political beyond party politics, mass demonstrations and revolutions is conceptualized as sub-politics, life politics or everyday politics. (Beck 1986, Giddens 1991a, Poferl 1999) Cautioning against an inflationary use of these concepts Beck argues that they should only be used when "*aiming at experimental changes in the basics of social life, which become part of public debate about social self-description.*" (Beck *et al.* 1999, p. 12, author's translation) Furthermore. "*the political […] is in its architecture something reflexive and reflective,*" (1999, p. 42, author's translation) whereby the broader articulation of everyday practices as political and their mobilization for altering social structures requires a certain amount of consciousness of societal problems and issues and how they are reproduced in everyday life.

Relating this assumption about what is political to my case of non-commercial carsharing I argue, that the use and ownership of cars is certainly part of the basics of social life in capitalism, and changes in the '*system of automobility*' are frequently matters in debates around social self-description. (Paterson 2007, Dennis and Urry 2009) For my work this means that the way a privately owned car is valued and used is of political importance the same way as the collective formal or informal organization of carsharing is a political issue in terms of sub- and everyday politics. Furthermore, because of non-commercial carsharing's strong ecological focus, its practices have to be regarded as inherently political:

> *"The 'ecological question' fosters – as mentioned – a typical contradiction between cultural pluralization and collective demands. It includes more or less deep and multi-dimensional conflict potentials between subjective and societal norms between different contradicting ideological positions and [conflicts]."* (Poferl 1999, p. 41, author's translation)

The third conceptual point relevant for my analytical framework is hegemony and its presence in everyday life. The concept of hegemony in Marxist terms was developed most elaborately by Antonio Gramsci in his prison notebooks as *"uncritical and largely unconscious way(s) of perceiving and understanding the world that has become 'common' in any given epoch."* (Hoare and Smith 1971, p. 322) Thus, hegemony is a *"condition combining consent and coercion,"* (Sevilla-Buitrago 2017, p. 169) which relies on a specific "*constellation of institutions, agents, and material and discursive practices that structure everyday lives."* (ibid., p. 169) Achieving this specific constellation is the aim of hegemony's "ceaseless discursive struggle for the production of common senses that shape forms of consciousness," (ibid., p. 169) making hegemony and the homogenization of *"fragmentary, incoherent popular commons senses"* (ibid., p. 170) inherently performative projects. (D'Alisa and Kallis 2016, García-López *et al.* 2017) This constant performance and re-articulation of hegemony takes place in everyday life and its social practices, (Butler *et al.* 2000, Joseph 2003) wherefore also counter-hegemony is located in the reproduction and transformation of everyday practices: *"Building counter-hegemony requires organized practices that re-politicize (make collective) dominant ideas […and] performing new socio-ecological (power) relations in the everyday life of routinized sociality."* (García-López *et al.* 2017, p. 90) Thus, the conceptual point of hegemony highlights how capitalist domination is present within everyday life through the repetition of everyday practices. Consequentially, counter-hegemony requires to repeat and reproduce them and their embedded common senses differently: (Velicu and Kaika 2017)

> *"What we see as performance of counter-hegemony […] is a way to repoliticize the organization of community life, its economy and ecology. These apparently localized and isolated experiments may contribute to a broader questioning of capitalism as a system where decisions are rooted in exchange value, private ownership and self-interest."* (García-López *et al.* 2017, p. 102)

Combining these three conceptual points provides the grounds on which the analytical concepts used in this study can unfold their full potential. Regarding everyday life and its practices as an outcome of hegemony and potential political space emphasizes their significance for social reproduction and their position in broader processes of change. With the analytical concepts of everyday resistance, re-embedding and commoning it is now possible to analyze how this position of practices of non-commercial carsharing within processes of change is realized empirically.

Redefining the everyday: Everyday resistance, re-embedding and commoning

The three analytical concepts for this work weren't there from the beginning, but emerged out of the conversation between fieldwork and literature. Everyday resistance was the first analytical concept I followed from early in my fieldwork as I think the term gathers essences of different concepts and allows to think them together. While it plays with the firmly established and recognized way of how change happens, it lays its focus on the more subtle way(s) of how opposition, counter-hegemony and change take place in everyday life. Thus it was the concept of everyday resistance, which sharpened my eyes for these subtle processes of change within my material and ultimately for the other two concepts of re-embedding and commoning.

Re-embedding is the second analytical concept and emerged from working on my theoretical framework to describe the disconnection between automobility and its ecological consequences as dis-embedding. Only after partially rereading Polanyi and literature continuing his thoughts of dis-embedding and re-embedding unfolded the potential of this concept for my case of non-commercial carsharing and its relation to everyday resistance. The use of commoning as my third analytical concept is very much inspired by the work from Anna Nikolaeva and colleagues. (Nikolaeva *et al.* 2019) Initially, it was only supposed to be one empirical window to look at non-commercial carsharing, but when reading the critical literature on commoning more in-depth, it became clear to me that commoning in its subtlest form could also be read as a practice of everyday resistance. (Velicu and García-López 2018)

Thus, the three concepts complement each other and are related in that they all focus on more subtle ways of how change takes place in everyday life but take different focuses on the concrete practices, their political intention or their implications for broader processes of change.

Everyday resistance

The concept of everyday resistance was first introduced as '*Weapons of the weak*' by James Scott in 1985 describing it as forms of resistance that are quiet, dispersed, disguised or otherwise seemingly invisible. (Scott 1985) Scott's understanding of resistance is based on a broad understanding of *"resistance [as] an oppositional act. It is an activity – a social action that involves agency; and that act is carried out in some kind of oppositional relation to power."* (Johansson and Vinthagen 2016, p. 2) Resistance then is not only

understood as highly visible and large scale mass demonstrations, oppositional political campaigns, violent revolutions or non-violent direct action, but also

> *"resistance might be hidden or disguised, or a subtle change of everyday repetitions, or it might be driven by a desire for escape and survival that is not framed as 'political' at all, in which the recognition by others of what one does is not wished for, and might even be something one actively tries to avoid."* (Lilja and Vinthagen 2018, p. 214)

In discussing Scott's work with the work of Asef Bayat (1997, 2000) and Michel de Certeau (1984), Vinthagen and Johansson (2013) developed the concept of everyday resistance further. Everyday resistance, as specific type of resistance, is "*about how people act in their everyday lives in ways that might undermine power [and it] is done routinely, but […] is not politically articulated or formally organized.*" (Vinthagen and Johansson 2013, pp. 2 & 6) Therefore, as such, everyday resistance is usually understood as an individual action, which might be embedded in a collective context or undertaken by an undefined collective context, but isn't organized on a formal or larger scale. (Vinthagen and Johansson 2013, Johansson and Vinthagen 2016, Lilja *et al.* 2017) The division between what can be counted as everyday resistance and what cannot is difficult to establish and ultimately always requires an empirical answer. However, it is important to emphasize that everyday resistance is inherently characterized by acting as "*a response to power from below – a practice that might challenge, negotiate, and undermine power*" (Lilja and Vinthagen 2018, p. 215) and is thereby deeply entangled with the hegemonic everyday powers it is resisting. (Johansson and Vinthagen 2016) Thus, practices of everyday resistance act not only against power, but are also always caught within networks of power, which influence the outcome of their acts. (Lilja and Vinthagen 2018) Thereby, everyday resistance is never total, but rather is a process and leads to resisting bits and pieces of everyday power, while subordinating to others.

Summarized "*everyday resistance is a matter of scattered and regular resistance with a potential to undermine power without being understood as resistance (or without the actors being detected)."* (Vinthagen and Johansson 2013, p. 37) Whereas this could be argued against as an overstatement of simply doing something a little bit different I follow Cohen and Hjalmarson in claiming that *"even when everyday resistance remains subtle and never becomes overt or large scale, it must still be viewed at the very least as a critique of existing social structures of domination, something that is inherently political, and that may still lead to incremental social and political change.*" (2018, p. 5)

Still, there remain questions that I need to answer in relation to my case of non-commercial carsharing, which will be answered in the discussion of this work:

- *What is the everyday resistance of non-commercial carsharing against?*
- *How does it undermine or negotiate power?*
- *Do the carsharers qualify as 'dominated' and act as a response to power from below?*

- *How is non-commercial carsharing politically articulated and how does this contradict its conceptualization as everyday resistance?*
- *Does the organization of non-commercial carsharing in associations disqualify it from being everyday resistance?*
- *What is the relation between everyday resistance, collectivity and community?*

In addition to the genuine concept of everyday resistance, as established by the literature cited above, I included two further notions in the analytical concept of everyday resistance: Indirect activism and everyday activism. (Pink 2009, 2012, Chatterton and Pickerill 2010) I regard them as rather types of and additions to everyday resistance than alternatives to it as both are based on a similar understanding of resistance and activism, but rather point towards the visions embedded in everyday resistance, emphasizing the sub- and everyday political content of everyday resistance.

Indirect activism is a concept developed by Sarah Pink through her work on the Cittàslow movement. Characteristic for indirect activism is that instead of "*lobbying national government, it advocates local policies and everyday practice that provide alternatives to homogenizing elements of global corporate capitalism [while] it attempts to educate people about these alternatives.*" (Pink 2009, p. 461) In their practice indirect activists link local everyday realities with global environmentalist goals, especially through festive and routine everyday practices. Therefore, the form of mobilization of indirect activism, instead of trying to stage demonstrations and revolutions, rather involves "*to demonstrate the alternative and better ways of doing things to those presented by global corporate capitalism, and thus convince local people to live their everyday lives [differently].*" (Pink 2012, p. 109) Compared to everyday resistance indirect activism focuses on the content of the altered everyday practices as alternatives as well as the political articulation of these by education and the provision of a good example.

Everyday activism is a concept developed by Chatterton and Pickerill to look into "*the specific practices of activists and how they challenge, deal with and imagine alternatives to life under capitalism in the everyday.*" (2010, p. 475) They were interested in what it means to imagine a life beyond capitalism while simultaneously being part of it. In their study they investigated beliefs of anti-capitalist activists, spaces of participation and boundaries between activist and non-activist spaces and found that the activists' self-descriptions go beyond 'militant' or 'activist' and everyday practices act as "*building blocks to construct a hoped-for future in the present,*" (ibid., p. 476) which are contested, complex and highly context-dependent. Albeit their context were specifically anti-capitalist movements, which is not the case in non-commercial carsharing, their findings have a lot to offer for my case and everyday resistance as a concept, especially regarding activist identities and everyday practices and how they point towards alternative futures and identities and their role in the wished for outcome of everyday resistance.

Thence, everyday resistance should be understood as a process characterized by the routine alteration and redefinition of hegemonic and dominating practices in everyday life. Following my reading of the

literature on everyday resistance, indirect activism and everyday activism I use the following six aspects to investigate non-commercial carsharing as a case of everyday resistance:

1) Entangled with everyday power
2) Response to power from below
3) Social action involving agency
4) Routinely done but without political articulation
5) Alternatives to homogenizing elements of corporate capitalism and building blocks for alternative futures and identities
6) Critique of existing social structures of domination

These aspects will be re-occurring throughout the empirical chapters and will be taken up in the discussion to build the case for non-commercial carsharing being a case of everyday resistance.

Also because everyday resistance strongly focuses on the processes and mechanisms behind alternative everyday practices as well as their characteristics it is the main analytical concept I apply in this study. As elaborated above my work includes two additional analytical concepts to investigate the alteration of everyday practices, which both are related to everyday resistance, but bring in their own perspective on how change of everyday practices is configured. As I will detail both of these in the empirical chapters five (Re-embedding automobility) and seven (Changing ownership) I will only briefly introduce them at this point.

Re-embedding

The concept of re-embedding has its theoretical origin in the work of Karl Polanyi (2001) and is closely related to the theoretical background of this study and the second contradiction of capitalism. In the literature, re-embedding is mostly understood as a process which can take place on the structural level, yet I argue that re-embedding can also take place on the individual level of everyday life and the context of everyday practices. Here, re-embedding refers to two interrelated processes. The first process of re-embedding refers to the recognition of the interdependence and interrelation between economy, society and nature, whereby it provides a social and ecological contextualization of everyday practices. (Giddens 1991b, Gibson-Graham *et al.* 2016) The second process of re-embedding refers to a counter-movement against the dis-embedding tendencies of the capitalist mode of production. (Thorne 1996, Barham 1997, Buechler 2000, Polanyi 2001) Effectively, the first meaning provides a reason for the second meaning to take shape, whereby they are inherently related with each other. However, re-embedding doesn't capture how these two interrelated processes take place and influence change, but is rather concerned with their effects and thereby stresses the systemic context of hegemonic practices, pointing to the potential influences on the broader system.

Commoning

Commoning describes "*a set of processual relations through which something becomes common*" (Nikolaeva *et al.* 2019, p. 8) and is based on a relational understanding of the commons as "*complex social*

and political ecologies which articulate particular socio-spatial practices, social relationships and forms of governance that underpin them to produce and reproduce them." (Chatterton 2010, p. 626, see also García-López *et al.* 2017, Velicu and García-López 2018) The commons are a (scientifically) long neglected form of ownership relations differentiated from state and private ownership by the common ownership and management of a resource or asset by a collective. (Ostrom 1990, Turner 2017) Commoning is usually understood as a process in opposition to capitalist ownership relations of mostly private property rights, whereby it matches basic requirements of everyday resistance as entangled with everyday power and a response to power from below. (Linebaugh 2008, Harvey 2012, Chatterton 2016, Stavrides 2016) However, commoning is usually characterized by a high political consciousness, wherefore it points beyond the actual alteration of everyday practices towards the broader visions and goals: *"The potential of commoning counter-hegemony is not related only to nurturing particular norms or subjectivities but also to performing a radical claim for political equality."* (Velicu and García-López 2018, p. 67)

Thence, the three analytical concepts for investigating the alteration of everyday practices and their implications for processes of change complement each other through enabling the in-depth investigating of the processes and mechanisms behind this alteration, while as well capturing their political content and their potential broader influences on social structures.

4.3 Elaborating the research questions

I already introduced my main research question of **how are non-commercial carsharing practices influencing local change in the mobility system** at the beginning of this chapter. This main research question most strongly emerged from my theoretical work on the relationship between mobilities and the capitalist mode of production and the practical and theoretical need to overcome current issues within the mobility system and beyond. (Klein 2014, Naess and Price 2016, Urry 2016) It is further based on the assumption that the system of automobility is currently changing towards systems of mobilities, (Kesselring 2019) and the interrelation of this change with the ongoing development and expansion of sharing mobilities, (Kesselring *et al.* 2020) which suggest that *"human flourishing (progress, freedom, satisfaction) can be achieved in ways tangential to, but not completely outside, hegemonic automobility."* (Dowling and Simpson 2013, p. 431) Overall, this research question then is guided by the interest in how non-commercial carsharing can locally contribute to a just and socio-ecological mobility transition. (Urry 2016, Sheller 2018)

In order to specify the influence of non-commercial carsharing on local processes of change in the mobility system I developed four sub-questions to my main research question, which are informed by the above presented analytical framework.

The first sub-question is: **How are non-commercial carsharing practices reconstituting everyday practices and meanings of (auto)mobilities?** I want to investigate the multitude of influences that non-commercial carsharing practices have on its practitioners. On one side, these are the practical influences in

carsharers' everyday lives. On the other side, I also want to explore their understanding of (auto)mobility and mobility in general. In their combination, altered practices with altered meanings have the potential to provide the above outlined lever for change of the mobility system. This question is informed mostly by the concept of everyday resistance, but also the other two concepts of re-embedding and commoning.

The second sub-question is closely related to the first and asks *how are non-commercial carsharing practices reconstituting ownership relations?* With this question I investigate how ownership is perceived, articulated and practiced by non-commercial carsharers and what the consequences of this reconstitution are or could be. This question is specifically informed by the concept of commoning mobility. (Nikolaeva *et al.* 2019)

The third sub-question is closely related to the concept of re-embedding and asks *how are non-commercial carsharing practices changing the carsharer's relations to the environment and society?* It follows the assumption that the process of re-embedding contextualizes practices ecologically and socially, leading to a higher awareness of ecological and societal damages and a reactive counter-movement to overcome these problems. This question thus also relates to aspects of collective agency and the articulation of non-commercial carsharing in the local political mobilities landscape.

As everyday resistance is my main analytical concept to investigate non-commercial carsharing and I opened up several questions about their relation my fourth sub-question is concerned with *how everyday resistance takes shape in non-commercial carsharing?* With this question I want to address the issue of in how far non-commercial carsharing can be described as a form of everyday resistance and what my case of non-commercial carsharing is adding to the concept of everyday resistance, especially in relation with the other two analytical concepts of re-embedding and commoning.

Throughout this study the above research questions will only sparsely be referred to frequently or specifically. They rather provide a guiding red thread for the reader and the upcoming empirical chapters and discussion.

With this analytical framework and research questions focused on the potential of change emerging from everyday life, I don't want to suggest that everyday resistance, re-embedding and/or commoning are the only ways in which change can take place in general or in the mobility system in particular. In order to change deeply entrenched structures such as the present of capitalist mobilities, altering hegemonic everyday practices by itself isn't sufficient to trigger widespread systemic change and *"there is a long road from particular […] processes to a broader radical transformation that could replace capitalism."* (García-López *et al.* 2017, p. 102) Therefore, the analytical concepts and my research questions rather provide lenses, contestations, interrogations and exemplary processes of how redefining everyday practices contributes to the *"corrosion of the dominant regime, attempting to weave together cracks that can purposefully crack the capitalist system."* (Chatterton 2016, p. 9) Only in conjuncture with changes on a structural level, out of reach

of most everyday lives, redefined everyday practices of mobility can most effectively provide pathways to a socio-ecological just and post-capitalist mobility future. (Conley and McLaren 2009a, Soron 2009, Doughty and Murray 2016)

5 Structure of this book

This book is structured into three parts. This introduction is the first chapter in the first part and is followed by *Chapter Two* on the methodology and methods. I follow the methodological framework of Critical Realism, whose main implications for this study are explained: ontological realism, epistemological constructivism and the transformational model of social action (TMSA). My main method for investigating non-commercial carsharing were semi-structured interviews with people who practice non-commercial carsharing in carsharing associations and private sharing arrangements. The interviews were coded using a combination of bottom-up (substantive) and top-down (theoretical) coding.

The second part is the main and empirical part of this book, consisting of five chapters. *Chapter Three* introduces the empirical material by providing a presentation of the context in the Greater Region of Munich and an overview of the gathered empirical material. The following empirical chapters each take a different perspective on non-commercial carsharing, each highlighting different facets of its practices and working out different aspects of everyday resistance. They are structured similarly in that each has a theoretical introduction, outlining relevant theory for the specific perspective, consists of two empirical parts and finishes with a summary and discussion of the empirical material with the presented theory.

In *Chapter Four* I present data suggesting a reconstitution of automobility through non-commercial carsharing, towards a more ambivalent formation of the meanings attached to the car in specific and the meaning of (auto)mobility in general. Essentially, I argue in this chapter that non-commercial carsharing alters the production and reproduction of the system of automobility and the automobile subject through the emergence of alternative automobile practices, meanings, identities, subjectivities and cultures.

In *Chapter Five* I argue that the practice of non-commercial carsharing is re-embedding automobility into its ecological context and thereby emerges a counter-hegemonic practice. The carsharers are quite clear on how non-commercial carsharing allows to resolve problematic automobility to a certain extent through its alternative practices resulting in the two-fold process of re-embedding as contextualization and counter-movement, revealing non-commercial carsharing's inherent tendency towards counter-hegemony.

In *Chapter Six* I focus on how non-commercial sharing connects functional and communal qualities through voluntary labor and shared rules, enabling the development of responsibility and trust and thereby the building, strengthening and maintaining of communities. This works against individualizing tendencies of automobility, re-embedds automobility into a social context, but also enables the collective alteration of the reproduction of social structures through collective agency.

In *Chapter Seven*, the last empirical chapter, I argue that new ownership relations emerge from non-commercial carsharing. These are challenging automobility at its root of private car ownership through a process of commoning mobility consisting of commoning meaning, movement and practice of mobility in interrelation with enclosures and boundaries. This process is replacing individual car ownership by actual and perceived shared car ownership, collective management and care and ultimately serves as expression of everyday resistance against capitalist mobilities.

The third part of this work consists of two chapters. *Chapter Eight* discusses the empirical chapters in relation with the concept of everyday resistance, building and defending non-commercial carsharing as a case of everyday resistance in conversation with the literature presented above. I further argue, that a main outcome of non-commercial carsharing as a case of everyday resistance is the emergence of an alternative mobility culture. *Chapter Nine* concludes this work by elaborating on non-commercial carsharing's relation with a socio-ecological mobility transition and pointing out the implications of this study for policy making and the research community.

Chapter Two *Methodology and Methods*

This chapter presents the underlying methodological framework of my PhD research, Critical Realism, as well as the methods of data collection and analysis.

1 Methodological framework: Critical Realism

Critical realism is a philosophy of science originating in the writings of Roy Bhaskar. (Collier 1994, Bhaskar 2005, 2008) It can be regarded as a third philosophy of science, next to the broad traditions of Positivism and Idealism. Both Positivism and Idealism tend to reduce ontology to epistemology – Positivism by only granting reality status to what is measurable and therefore 'knowable' and Idealism by placing reality exclusively within the construction of the human mind. Take for example the Marxist concept of value: Positivism would claim that, because value as the crystallization of *socially necessary* labor time is not measurable it can't exist or at least is a useless concept. Idealism on the other side would claim that the concept of value is a purely mental construct without any significance outside our imagination and discourses. However, Critical Realism claims that the concept of value is not only referring to something that is existing in reality but also presents a theory with a high explanatory power for economics, while simultaneously offering an explanatory critique towards mainstream economics. And although as a causal mechanism (process in social sciences) it can't be measured directly, it is possible to inquire and determine the effects it has on the economy and society. (Collier 1994)

I am going to elaborate on this realist conception of the world by discussing transcendental realism and its implications for human sciences, summarized under the term of critical naturalism, which result in the Transformational Model of Social Activity (TMSA). I will conclude with explaining the methodological assumptions relevant for my dissertation regarding reflexivity and positionality.

Transcendental realism

Transcendental realism assumes that objects have an existence outside of and independent from our knowledge about them. It therefore emphasizes ontology (the understanding of being) above epistemology (the understanding of knowledge). What is real, is not reducible to what we know or in other words: "*ontology (i.e. what is real, the nature of reality) is not reducible to epistemology (i.e. our knowledge of reality).*" (Fletcher 2017, p. 182) The support for this argument was derived by Roy Bhaskar by posing the transcendental question of 'How is empirical knowledge possible?' His conclusion was, that in order to have knowledge about some same thing it must be real: "*those features of the world which make knowledge possible are not necessarily a priori; they are real features of the world [and] granted that we do exist knowingly on the world, we can construct transcendental arguments from this fact to illuminate some structure of that world.*" (Collier 1994, p. 23) Therefore, the world must consist of real *mechanisms* and

structures which are durable and hence also knowable by making transcendental arguments. Transcendental realism also accepts the *"reality of* underlying *mechanisms, structures, etc., which don't appear in experience, but cause phenomena that do."* (ibid., p. 26, emphasis in original) However, as structures and mechanisms are only observable through their appearances, they can never be completely 'known' wherefore theories and science in general are only the best available approximation to truth and therefore in principle fallible.

In order to illuminate the structures of the world, science is setting up experiments. Experiments (in the natural sciences) are artificial set-ups to create a closed system in which the function of one generative (causal) mechanism can be observed, explored and explained, e.g. creating a vacuum to test the expansion of sounds or an isolated chemical reaction, e.g. hydrogen and oxygen reacting to water. In a closed system *"a given causal stimulus will always produce the same effect: experiments are repeatable. Where a genuine causal mechanism has been isolated as a closed system, we can say 'every time A occurs, B follows', as in Humean causality."* (ibid., p. 33 f.) The point of isolating mechanisms is "*to find out what goes on when we are not making experiments."* (ibid., p. 35) However, a crucial point I will come back to when discussing critical naturalism is that it is not possible to directly transfer an event from a *closed system* to an *open system*, because in an open system mechanisms are not operating in isolation. Thereby a specific event in an open system might be the outcome of the interplay of various mechanisms of which some contradict the event itself. Summarizing the arguments above, transcendental realism can be characterized by four essential points:

1) Objectivity: Something is real, also in case we don't know about it
2) Fallibility: Claims are open to refutation
3) Transphenomenality: We can have knowledge about structures which generate appearances
4) Counter-phenomenality: "*Knowledge of the deep structure of something may not just go beyond, and not just explain, but also* contradict *appearances."* (ibid., p. 7, emphasis in original)

As a consequence, transcendental realism leads to asserting the existence of durable structures in multiple layers of reality (the empirical, the actual, the real) (Fletcher 2017), resulting in a "*multi-layered and emergent ontology,*" (Curry 2002, p. 120) conceptualized as depth realism. The first characteristic of depth realism, is an understanding of reality as layered. (Collier 1994; Table 2.1) The empirical domain contains what we actually experience (e.g. a wet garden), whereas the actual domain also contains events, which can but must not be experienced (e.g. the rain that made the garden wet). Mechanisms causing the rain to fall (e.g. evaporating water, the global climate system) however are located on the real domain of reality – they are generating an event and can therefore be called *generative* or *causal mechanism*, which is "*that aspect of the structure of a thing by virtue of which it has a certain power.*" (Collier 1994, p. 62)

Table 2.1: The three layers of reality according to Bhaskar. (Based on Bhaskar 2008, p. 2)

	Domain of Real	**Domain of Actual**	**Domain of Empirical**
Mechanisms	X		
Events	X	X	
Experiences	X	X	X

In the example used, we see that there is not only one, but multiple mechanisms at work, which in their interaction in an open system cause an event that can be experienced. Within these mechanisms some can be observed and therefore experienced, though this must not be the case. The natural world thus is the result of "*a multiplicity of mechanisms jointly producing the course of events*" (Collier 1994, p. 46) and therefore *necessarily* an open system. Due to the multiplicity of generative mechanisms co-determining a series of events, the effect of a single mechanism in an *open system* must be analyzed as a tendency. A tendency is always exercised once it is triggered (e.g. water expands when heated), but can remain unrealized (e.g. if this happens in a sealed container).[5] An open system, e.g. nature and society, thus "*consists […] of the interplay of the tendencies of things, exercised but incompletely realized because of their coexistence.*" (ibid., p. 63)

The second characteristic of depth realism specifies the relations between these mechanisms. Nature is conceptualized as stratified as "*an ordered series of generative mechanisms, in which the lower explain without replacing the higher.*" (ibid., p. 48) This argument essentially suggests a horizontal order of generative mechanisms in nature in which higher mechanisms are governed by the mechanisms below it, whereas the lower mechanisms are not governed but affected by the ones above it: "*Animals are necessarily governed by* both *kinds of law, physico-chemical and biological. Minerals, while not* governed *by biological laws, are nevertheless* affected *by them*." (ibid., p. 48, emphasis in original) Likewise, no animal (humans included) can break the laws of chemistry and physics (e.g. theory of atomic structure, laws of thermodynamics), however by our biological and social nature we can influence their appearances (e.g. artificial chemical reactions, local reduction of entropy). This closely relates to the notions of emergence and rootedness employed by Bhaskar, expressing a relation between mechanisms in adjacent strata. (Bhaskar 2008) Higher-level mechanisms are rooted in but emergent from lower-level mechanisms, hence "*recognizing that the more complex aspects of reality (e.g. life, mind) presuppose the less complex (e.g. matter), [while insisting] that they have features which are irreducible, i.e. cannot be thought in concepts appropriate to the less complex levels.*" (Collier 1994, p. 110f.) Hereby, the emergence of higher-level strata is seen as accidental and although their emergence

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[5] Collier (1994) writes about tendencies: "*Things tend to act in certain ways: that is to say, if triggered, a tendency will come into play and have effects, though these effects may not be the ones it would have had in a closed system. While the word 'power' draws attention to the existence of unexercised powers, the word 'tendency' draws attention to the existence of exercised but unrealized tendencies. And the 'course of nature' consists, for the most part, of the interplay of the tendencies of things, exercised but incompletely realized because of their coexistence [in open systems] – oaks tend to grow tall, but not in Beddgelert Forest because of the wet soil; yet their tendency to grow tall is not without effects in Beddgelert Forest – they do get taller than the gorse bushes, and many of them do fall over.*" (p. 63)

might be explainable in purely lower-level mechanisms the emergent stratum has features of its own. For example, we might be able to explain the emergence of life in terms of chemical and physical mechanisms, however we cannot explain biological mechanisms (e.g. natural selection) in purely chemical or physical terms:

> *"Biological organisms […] are composed of chemical substances. It is because they are so composed that they are rooted in chemistry. But they are also emergent from it: they obey laws other than chemical laws, and can do things that could never have been predicted from chemical laws alone."* (ibid., p. 116)

Transcendental realism thus offers a view of the real world and its domains as "*irreducible wholes which are both composed of parts that are themselves real irreducible wholes, and are in turn parts of larger wholes, with each level of this hierarchy of composition having its own peculiar mechanisms and emergent powers*." (ibid., p. 117) This results in an understanding of reality as a complex open system consisting of layered structures with causal mechanisms producing events which can be experienced. Due to the interplay of multiple mechanisms, these mechanisms need to be understood and analyzed as tendencies. A crucial problem inherent in the emergent and rooted stratification is that the higher-level mechanisms are impossible to isolate in a closed system, wherefore it is becoming increasingly difficult to determine causal mechanisms in the real domain of reality. While this poses a considerable problem for the social sciences to conceive of controlled experiments to predict the social world, it highlights and strengthens the role of theory to understand and explain the relationships between mechanisms and events.

Critical naturalism

The critical point in Bhaskar's philosophy is that he argues that transcendental realism, derived from investigating scientific practices (in the natural sciences), has implications for the human sciences. This argument is called critical naturalism and adheres that ontologically the natural sciences and the human and social sciences are relatable. (Collier 1994, Joseph 2002) This means that the human sciences are able to retroduce real mechanisms from events and experiences. One big difference is that in the natural sciences it is relatively achievable to artificially create closed systems in which the effects of causal mechanisms can be readily observed. Society or (groups of) people, the object of study in social sciences, are necessarily part of an *open system* where an infinite number of "*occurrences and events can overlap and interact and in which people can learn and change,*" (Fletcher 2017, p. 185) making the retroduction of mechanisms more complicated. Most of these parts of the social whole can only be measured indirectly through their effects, (Ehrbar 2002) wherefore theory is playing an essential role in sense-making and critical realist theorists seek for explanation and causation rather than prediction or the determination of universal laws or general truths. (Maxwell 2012) Nevertheless, by following critical naturalism it is understood that in the social sciences theories can be used (and tested) as scientific explanations for the relationships of causal mechanisms in social systems consisting of social structures and individual and collective agency.

The most important aspect requiring consideration when discussing critical naturalism is the description of society as an *open system*. As described above a closed system is an artificial experimental set-up in order to observe the working of one mechanism, e.g. an experiment exploring gravity. The experimental environment is controlled and the influence of other mechanisms is reduced to a minimum. In the example of exploring gravity, this can be achieved relatively easily, just imagine a laboratory where one person measures the time it takes for a pen to fall one meter. The biggest source of error in this set-up is the person stopping the time and the effect of the mechanism of gravity can be easily measured. The characteristic of an open system, however, is that we are not able to measure the effect of one single mechanism because we are unable to reduce the influence of other mechanisms. Remaining in the natural sciences, consider the example of investigating the travel behavior of a pack of wolves. It is impossible to create an experiment without physical and chemical mechanisms influencing the experiment, because nature is an open system. In order for us to derive knowledge of the workings of the biological mechanism(s) we need to know how the underlying mechanisms work and interfere with our experiment. Already this is a difficult scientific task to undertake. Now imagine an 'experiment' in the open system of society where we not only have to consider physical, chemical and biological mechanisms but also psychological mechanisms on an individual level and societal mechanisms on a supra-individual level. Therefore, society being an open system has far-reaching implications on the way of doing research and the types of conclusions we can derive from it.

One of these implications is the refutation of causal determination: "*In open systems, mechanisms operate and have effects other than those they would have in experimental situations, due to the codetermination of these systems by other mechanisms.*" (Collier 1994, p. 36) This means that although mechanisms have causal powers, these powers can have different appearances in open systems. In addition to being perceived (the purpose of creating a closed system), they can remain unexercised, be exercised but remain unrealized or they are exercised and realized but still remain unperceived. Therefore, the declaration of universal laws such as 'whenever A then B' is not possible for an open system such as society, resulting in the already discussed necessity to describe mechanisms as tendencies. In its consequence the complex and only partially knowable interplay of tendencies renders causal determination in the human sciences impossible. The multiplicity of mechanisms at work, which might even remain unnoticed by the researcher, further hampers the ability of social science research to predict the outcomes of social processes and interventions. (Maxwell 2012) But then how is research possible in open systems such as societies?

While critical realism refuses causal determination in the form of variance theory ('A always leads to B'), critical realism accepts causation in the form of process theory dealing "*with* events *and the processes that connect them […] based on an analysis of the causal* processes *by which some events influence others.*" (Maxwell 2012, p. 36, emphasis in original) Process in this case has the same meaning as mechanism, wherefore causation in the social sciences refers to knowledge of how the interplay of mechanisms causes

events within a specific context: "*Mechanisms are seen not as general laws, or as having invariant outcomes, but as situationally contingent; their actual context is inextricably part of the causal process.*" (ibid., p. 36) Thus, explanation in the social sciences does not refer to an *efficient cause* but to a relationship between mechanisms and mechanisms and their effects. (Collier 1994) This understanding of causality puts context – the concrete conjuncture of circumstances – into a central position in research on societies: "*In order to explain the concrete conjuncture we have to unravel by analysis (in thought) the multiple mechanisms and tendencies which make it what it is.*" (Collier 1994, p. 255 f.)

Therefore, the investigation of social processes generally favors "*the in-depth study of one or a few cases or a relatively small sample of individuals, and to textual forms of data that retain the chronological and contextual connections between events.*" (Maxwell 2012, p. 36) This investigation of social processes leads to theory-building, which is especially necessary in the social sciences as the individual mechanisms of the social whole can only be measured indirectly through their effects. (Ehrbar 2002) Critical realism regards theories in the social sciences not as mental abstractions but as referring to a real mechanism, a set of mechanisms or social structures and their contextual effects. Thence, according to critical realism, the purpose of research in the social sciences is the explanation of causal processes based on experiences from concrete conjunctures in a social world determined by the interplay between and context of causal mechanisms, social structures, powers, tendencies and relations across multiple rooted and emergent stratified societal layers and individual and collective agents with agency based on values, beliefs, emotions and reasons. (Collier 1994, Brown *et al.* 2002, Creaven 2002, Joseph 2002, Sayer 2011, Maxwell 2012)

Transformational Model of Social Activity (TMSA)

As said before, Critical Realism asserts that in the social sciences theories can be used (and tested) as scientific explanations for the relationships of causal mechanisms in social systems consisting of social structures, individual and collective agency and their social relations. This is elaborated in the Transformational Model of Social Activity (TMSA) – the critical realist conceptual model for the interplay of structure and agency – in which my understanding of social change is rooted. (Collier 1994, Bhaskar 2005, Wheatley 2019) Bhaskar developed the TMSA as a transcendental refute to overcome the long-standing debate between humanism and structuralism on the relationship between society and the individual, incorporating both its basic premises:

> "*Societies (composed as they are of relations between people, and ramifications of those relations) can only exist as the outcome of human agency. If we were not reproducing/transforming social relations all the time, they would not exist: that is the truth of 'humanism'. But all human action presupposes the pre-existence of society and makes no sense without it. Its social context determines what actions are possible and what their outcomes will be. That is the truth of structuralism.*" (Collier 1994, p. 145)

In line with a dialectical account of the relationship between structure and agency, (Berger and Luckmann 1967, Giddens 1984) the TMSA asserts that societal structures are preconceived for every individual and are reproduced through individual action. Agency however, is on one side the (usually unconscious) reproduction and transformation of social structures, but on the other side agency enables people to engage in conscious production as they *"choose to live and be in the world in particular ways"* (Wheatley 2019, p. 21):

"Society is both the ever-present condition (material cause) and the continually reproduced outcome of human agency. And praxis [(agency)] is both work, that is, conscious production, and (normally unconscious) reproduction of the conditions of production, that is society. One could refer to the former as the duality of structure, and the latter as the duality of praxis." (Bhaskar 2005, p. 37 f., emphasis in original)

Thereby the TMSA resolves the debate on the directionality between structure and agency, by understanding both as separate entities, which are however, inextricably interrelated and thereby *"mutually ontologically dependent."* (Collier 1994, p. 145; see Figure 2.1)
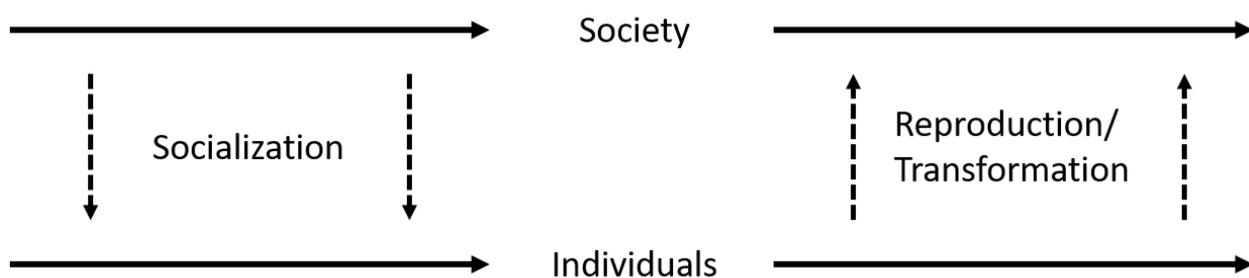
Figure 2.1: The Transformational Model of Social Activity. (Based on Bhaskar, 2005, p. 40)

The focus of the TMSA lies in the social relations between individuals and the society as this is where emancipatory change of social structures can take place when transformation and conscious production coincide: *"It is to these structures of social relations that realism directs our attention – both as the explanatory key to understanding social events and trends and as the focus of social activity aimed at the self-emancipation of the exploited and oppressed."* (Bhaskar 2010, p. 4, cited in Collier 1994, p. 10)

The existence of social structures and social relations between structures and individuals essentially depends on their constant and multiplied individual reproduction through social practices: (Curry 2002) *"Structures are maintained because human activities are collectively organized into social practices and it is these social practices that contribute to the reproduction of social structures."* (Joseph 2003, p. 128) Thence, change can most effectively take place through collective action and the transformation of the practices that reproduce structures through conscious production. (Danermark *et al.* 2002, Vinthagen and Johansson 2013, Cohen and Hjalmarson 2018, Wheatley 2019) Agency therefore is shifted from the individual to the collective agent and its relation to social structures. (Buechler 2000, Wright 2019) This emphasizes the importance and dominance of social structures as well as the need for collective action for directed change, without

neglecting the agency of individuals as structuralist approaches tend to do. (Joseph 2002, 2003) Instead, the conceptualization of human agency in Critical Realism goes beyond human action and acknowledges the causal powers of people's reasons, values, emotions and beliefs. Reasons are not subjective, purely constructed, entities without any causal influence. Instead, reasons have to be understood as the outcome of reasoning based on values and facts in everyday life, as the expression of a relationship of concern with the world and thereby as causes for agency. (Collier 1994, Manicas 1998, Bhaskar 2005, Sayer 2011, Maxwell 2012)

To sum up, the TMSA provides *"an account of how we interact with society, being both its effects and its causes, yet not mere links between social causes and social effects, but the being by which a unique kind of causal power comes into the world: the causal power of reasons."* (Collier 1994, p. 151) It recognizes structure and agency as separate and analytically distinguishable elements, which however are inextricably interrelated through the social relations between society and individuals embodied in social practices. (Joseph 2003)

Implications of a critical realist methodology

Adopting a critical realist methodology has many implications for this study and scientific work in general, but I will only outline the most important ones at this point. In this work Critical Realism takes the role of an underlabourer in the same way as Joseph sees an 'underlaboring' role for critical realism within Marxism, arguing that "*only Marxism itself can provide the analysis of the specific features of the social world for this is the task of science rather than philosophy. However, philosophy can assess the nature of these claims and insist on a scientific framework that is consistent with a critical realist ontology.*" (Joseph 2002, p. 26) Bhaskar argues in a similar way that philosophy "*cannot tell us what structures the world contains or how they differ. These are entirely matters for substantive scientific investigation.*" (Bhaskar 2005, p. 6, quoted in Collier 1994, p. 25) This for example results in the adaptation of the above elaborated TMSA and its understanding of agency inclusive of reasons, but also concepts such as tendency, mechanism and process and a generally relational understanding of change and human existence.

Furthermore, Critical Realism supports normative approaches within the social sciences through loosening the fact/value separation and the argument for explanatory critiques: (Collier 1994, Lawson 1994, Bhaskar and Collier 1998) "*The ability to engage in explanation and causal analysis (rather than engaging in thick empirical description of a given context) makes [critical realism] useful for analyzing social problems and suggesting solutions for social change.*" (Fletcher 2017, p. 182) With this work I thus do not want to simply provide a supposedly neutral *'thick description'* (Geertz 1973) of what is currently happening, but I want to provide an interpretation of why this is happening as well as an account of how it should and could be happening in the future.

Elaborating on the essential implication of Critical Realism (what is real is not reducible to what we know) Maxwell asserts that a realist ontology – "*there is a real world that exists independently of our perceptions, theories, and constructions*" (Maxwell 2012, p. 5) – based on Critical Realism should be combined with a constructivist epistemology – "*our* understanding *of this world is inevitably a construction from our own perspectives and standpoint*" (ibid., p. 5) – by accepting *"that there are different valid* perspectives *in reality."* (ibid., p. 9, emphasis in original) He argues that a researcher can always only know and speak from her or his position. Therefore, knowledge is always relative in regards to different positions and can never be complete: "*All theories about the world are seen as grounded in a particular perspective and worldviews, and all knowledge is partial, incomplete, and fallible."* (ibid., p. 5) This position is supported by one of the knowledge claims of Critical Realism, fallibility: "*For insofar as claims are being made […] about something that goes beyond [data of appearance], the claims are always open to refutation by further information.*" (Collier 1994, p. 6) This is because "*the structure of the world is neither necessary nor transparent to reason, [wherefore] our knowledge of it is always fallible*" (ibid., p. 23) and the results of scientific inquiry are finally *"a set of theories about the nature of the world, which are presumably our best approximation to truth about the world."* (ibid., p. 50) This relativist epistemology results in reflexivity and positionality of the researcher being an important aspect of scientific research, which implies a need for transparency about the theories used and interpretations made which result in the arguments supporting the truth claims made by me as a researcher. (Maxwell 2012, chap. 8)

While I attempt to reflect my positionality throughout the text, I certainly didn't fully succeed. The most visible consequence I drew from the need for transparency of my position is to write from a first-person-perspective. This intends to make clear, that the arguments I bring forward and the claims I make towards structures, processes and tendencies are made from my perspective as white, western and cis-gendered male and within my socio-structural context. They are therefore no claims to general truths explaining everything everywhere, but claims to contextual truths and the causal validity of mechanisms, tendencies and structures. I furthermore make my choices for theories and concepts transparent and clear from my perspective and didn't try to appeal to generic notions such as 'it is known, that' but intend to '*own my assumptions*.' (Maxwell 2012, p. 82f.) Herewith, I want to provide a transparent argument, which claims contextual truth to contextual mechanisms, structures and tendencies and thus helps to understand general mechanisms, structures and tendencies. Through transparency of my choices I want to underpin the validity of my interpretation from my perspective and therefore offer the reader the possibility to decide for herself/himself if the argument is valid from their perspective or not.

2 Methods

2.1 Data collection

In this section I will present my methods of data collection consisting of semi-structured interviews and observations and participations. Furthermore, I describe the sampling process including the finding of participants and the limitations of my data collection process.

Semi-structured interviews

Having chosen to investigate a type of carsharing that is scarcely researched I decided to adopt an explorative but theory-driven approach. Therefore I chose to conduct semi-structured in-depth interviews for my primary way of collecting data. (Charmaz 2006a) These enabled me to pre-structure the interview along issues and themes that I deemed relevant, while remaining open to the interviewees and their topics, interpretations and ideas. (Fletcher 2017) The four themes for the interview guideline were derived from a theoretical interest and a literature review conducted while defining the topic of my dissertation:

1. Practicalities – How does non-commercial carsharing work in practice and everyday life?
2. Effects of non-commercial carsharing on carsharers?
3. Motivations for practicing non-commercial carsharing/being part of a carsharing association?
4. Worldview and socialization of the carsharer

Together with two opening grand tour questions (Leech 2002) my final interview guideline consisted of 27 questions, more or less equally distributed amongst the four themes. The guideline for carsharing associations and private carsharing only differed in aspects that were directly related to their carsharing practice.[6] When I started my interviews I had to modify my interview guideline multiple times, partially because some questions weren't understandably formulated and partially because new aspects came up in the first interviews that I wasn't aware of at the beginning. The need for adaptation was increased due to the scarcity of potential interviewees (see selection of participants), wherefore I was only able to conduct one pilot-interview before I started conducting the main interviews. Overall the semi-structured interviews allowed me, besides getting answers to the questions I wanted to investigate, to get a deep insight into people's everyday life and practices regarding their mobility and especially their non-commercial sharing practices. In total I conducted 38 interviews in German and one in English from March 2018 until May 2019 of which I used 34 – 22 in eight carsharing associations and twelve in private carsharing. The other five interviews are not part of my data corpus and consist of one interview with a member of StattAuto, two interviews with formal non-commercial cargobikesharing organizations, one interview with a member of the round table for mobility of a local NGO and the pilot interview in private carsharing. (Table 2.2)

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[6] A translated version of the interview guideline for carsharing associations and private carsharing can be found in appendix 1

Table 2.2: Overview of the interviews in the different forms of non-commercial carsharing.

Carsharing associations	Private car- & cargobikesharing	Other

▪ 22 interviews
▪ 8 associations:
  ▪ Grafing (9)
  ▪ Markt Schwaben (4)
  ▪ Königsbrunn (3)
  ▪ Vaterstetten (2)
  ▪ Anzing (1)
  ▪ Erding (1)
  ▪ Freising (1)
  ▪ Grasbrunn (1)
	▪ 12 interviews
	▪ 11 private carsharing arrangements
	▪ 1 shared cargobike
		▪ 1 pilot interview private carsharing
		▪ 1 StattAuto member
		▪ 1 participant of ‚Stammtisch Mobilität' of local NGO
		▪ 2 organizationally shared cargobikes

The interviews were mostly held at the homes of the interviewees, but also in cafés and restaurants, on playgrounds, on park benches or in a community garden. Some of the interviews were conducted in groups, where multiple family members were using the carsharing associations or multiple people of the private sharing arrangement were present. In total, thus, I interviewed 42 non-commercial carsharers in the 34 interviews. (Table 2.3) The interviews took between 38 minutes and more than two hours. Each interview was recorded for later transcription with the consent of the interviewees.

Observations and participation

In order to be able to get a deep and thick account and understanding of the practices of non-commercial carsharing in addition to the semi-structured interviews I conducted ethnographic fieldwork through observations and participation. Actually, the ethnographic fieldwork somehow emerged from the interviews. When I was having one of my first interviews in Markt Schwaben I was invited to a large carsharing meeting with all carsharing associations in the region. While I was first surprised that there even is such a meeting and that there are that many associations, in a second thought I was happy to get the opportunity to get an insight into the workings of the regional network of carsharing associations and to get contact and therefore an easy access to potential interviewees. In Markt Schwaben I attended a car cleaning party which I used as a basis for the introductory vignette and also attended a regulars table of the association with about 25 participants. I further attended and gave a presentation at the yearly association meeting by the young association in Grasbrunn to get a first-hand insight into the inner organizational workings of an association and some potential interviewees.

In all the municipalities I conducted interviews with members of a carsharing association I also took sufficient time to walk around the village and get an impression of how the material context of the municipality is. Some of these impressions I documented with photographs and are part of this work. Furthermore, as most of the interviews took place at the homes of the interviewees wherefore I could also

get a glimpse into their personal and everyday lives, which albeit still superficial is deeper than it would have been in other interview settings. Additionally, living in Munich during the time of my dissertation provided me with a deep and personal insight into the social, material and political aspects of mobility in Munich allowing me to gain important contextual knowledge.

Selection of participants

From the beginning of my research I had difficulties finding participants for my interviews. Albeit I had planned to follow a purposive sampling approach in order to find a sample that is able to "*best exhibit the characteristics or phenomena of interest,*" (Maxwell 2012, p. 94) I quickly realized that I had to take every interviewee that agreed to an interview. Only in the very end of my collection process, when I had sufficient interviews and was able to see the gaps in my sample, I started purposely looking for interviewees. For my two cases the carsharing associations and private carsharing I followed different strategies to find participants.

Private carsharing arrangements: Call for participation

Finding people who practice private carsharing proofed much more difficult than I thought it would be. As a first step I reached out to people active in Munich's civil society, as I assumed these could know some projects through their position as network nodes. The people I contacted were mostly active in the mobility and alternative scene, e.g. multiple Local Exchange & Trading Schemes (LETS), organizers of alternative events, local groups and NGOs concerned with urban sustainability, a mobility regular's table of a local NGO and NGOs on transport. However, none of the people I contacted knew any existing projects or people who were privately sharing a car. In parallel to finding network nodes I activated my personal networks in Munich. Apart from asking my friends and colleagues to spread my search for interview participants I also reached out to the local chapter of the Hans-Böckler-Foundation, which is funding my research, and the local union I am involved with. These efforts brought me my first interviewees for private carsharing.

After I had activated all my networks and surroundings and still only had four interviewees in private carsharing, I had to increase my efforts. Therefore, I designed a flyer (Appendix 2) and poster as call for participation and distributed these in the more than 30 neighborhood meeting points all across Munich, at the universities, the trade union building and cafés. I also contacted a local citizen radio and again reached out to local organizations in the mobility scene, now with the request to disseminate my call for participation via their newsletters and social media and also had the university include my call in a newsletter for PhD-students. After some success with these methods I took the last option available to me and created a *facebook*-page, asked my local friends to share the page, advertised it in ten groups, related to sharing, mobility or sustainable living and even run a paid advertisement for two weeks.

From the beginning I expected it to be difficult to find people who practice private carsharing, because of the local and personal nature of these arrangements without any form of online representation or local

network. However, I didn't expect it to be that difficult and it made this part of my study a stressful, difficult and labor-intensive experience. Albeit I still was able to find twelve private carsharing arrangements in the past, present or future, I think the large efforts I had to undertake also point to the marginal role private carsharing is playing in Munich as a wealthy city with very high private car ownership. Due to the low outcome for interviews in private carsharing I quickly was forced to put more empirical emphasis on the carsharing associations.

Carsharing associations: Direct contact

The contact to the carsharing associations was comparably easy as all of these have a website and a contact e-mail address. Through conducting interviews with board members in Markt Schwaben and Vaterstetten, I had contacts I was able to refer to when writing associations I didn't contact before. Overall, I contacted seven associations of which all but one forwarded my call for interview participants to their members via e-mail. With one association, that wasn't founded at the time of the interview, I got in contact via the Hans-Böckler-Foundation.

The associations I first included in my data represented mostly the older associations (e.g. Vaterstetten, Markt Schwaben) and people who were very active in the organization of the association, e.g. the board and long-term members. In order to gain a fuller understanding of the carsharing associations I then reached out to associations which are relatively new and therefore include people who just recently became engaged in carsharing. I further reached out to an old association with the request for interviewees who are new to the association or have not been actively engaged. This made my sample more representative of the actual members of the associations and provided me therefore with a more complete picture including associations in different stages and members in different positions. Albeit this relatively easy access to the field and the far reach of my call for interviewees, I only ended up with 22 interview offers of which I accepted all.

The sample and its limitations

In the table below I listed the socio-demographics of the 42 interview partners and their position in the association as far as I am aware of them. (Table 2.3)

Table 2.3: Socio-demographics of the interview partners. Most values are estimates as their exactness isn't relevant for my argument. F = Female, Male = M, ? = Unknown, Mu = Munich.

Pseudonym	Age	Sex	Type	Education	Job	Income	Place of residence
Karl	60s	M	Association	University	Economist	Middle	Vaterstetten
Clara	50s	F	Association	Abitur	Librarian	Rather high	Vaterstetten
Rosa	50s	F	Association	?	?	Rather high	Markt Schwaben
Antonio	50s	M	Association	University	Environmental technician	Rather high	Markt Schwaben
Frigga	60s	F	Association	University	Pensioner	Low	Markt Schwaben
Robert	40s	M	Association	University	IT technician	Rather high	Markt Schwaben

Helen	30s	F	Association	Apprenticeship, Abitur	?		Middle	Grafing
Henri	61	M	Association	University	Self-employed	High		Grafing
Maxim	68	M	Association	University	Pensioner	Rather high		Grafing
Ulrike	50s	F	Association	?	Elderly care	Low		Grafing
Hannah	40s	F	Association	University	Psychotherapist	Rather high		Grafing
Mariarosa	60s	F	Association	?	?	Rather high		Grafing
Erich	62	M	Association	University	Medical informatics	Middle		Grafing Bahnhof
Bob	60s	M	Association	University	Social worker & bike technician	Rather high		Grafing
Elmar	60s	M	Association	University	Project manager	Rather high		Grafing Bahnhof
David	20	M	Association	Abitur	Student	Low		Königsbrunn
Friedrich	50s	M	Association	University	Energy technician	Rather high		Königsbrunn
Sophie	50s	F	Association	?	?	Rather high		Königsbrunn
James	60s	M	Association	University	Pensioner	Middle		Königsbrunn
Christa	40s	F	Association	University	Social work	Rather high		Anzing
Georg	40s	M	Association	University	Social work	Rather high		Anzing
Simone	50s	F	Association	?	Civil servant	Middle		Freising
Murray	50s	M	Association	University	Teacher	Middle		Erding
Jean-Paul	30s	M	Association	PhD	?	Rather high		Grasbrunn
Stella	30s	F	Private	University	Social worker	Middle		Mu: Laim
Cinzia	30s	F	Private	University	?	Middle		Mu: Hirschgarten
Béla	30s	M	Private	?	?	Middle		Mu: Laim
Tariq	30s	M	Private	University	?	Middle		Mu: Hirschgarten
Raya	70s	F	Private	University	Pensioner	Middle		Mu: Westend
Ivan	40s	M	Private	?	CEO energy start-up	Middle		Wolfratshausen
Beverly	30s	F	Private	?	Media	Rather high		Mu: Schwabing
Suzanne	30s	F	Private	University	Project manager	Rather high		Mu: Laim
Judith	70s	F	Private	Apprenticeship	Flight attendant, elderly services	Low		Mu: Haidhausen
Karin	30s	F	Private	?	?	Rather high		Mu: Schwabing
Nancy	30s	F	Private	Apprenticeship, Abitur	Carpenter	Low		Mu: Schwanthalerhöhe
Louis	30s	M	Private	Middle School	Waiter	Low		Mu: Nymphenburg
Selma	40s	F	Private	University	Political scientist	Middle		Neubiberg
Martha	39	F	Private	University	Public relations	Rather high		Mu: Bogenhausen
Walter	50s	M	Private	University	?	Rather high		Mu: Haidhausen
Mimi	40s	F	Private	?	Musician	Middle		Mu: Riem
August	40s	M	Private	University	Engineer	Middle		Mu: Riem
Ellen	60s	F	Private	?	Self-employed	Middle		Mu: Riem

As said before the availability of interviewees was limited, wherefore I conducted every interview I was able to get. It is evident that the sample is not representative of the broader population, as people with high education and high income are strongly overrepresented. Additionally, it is not assured that my sample is representative for neither private carsharing nor the carsharing associations, but that the people are represented that were willing to speak to me about their practice in an interview situation. Whereas this clearly limits the possibility of a broader generalization of my results it doesn't undermine the contextual claims about tendencies and causal mechanisms, which might be similar in other contexts through their grounding in more general theories and concepts.

2.2 Data analysis

The aim of my study is to go beyond pure description by offering an interpretation and explanation of non-commercial carsharing grounded in a thick description. In order to provide both, I adapted a two-level coding procedure consisting of substantive and theoretical coding and categorization into analytical themes, which I will describe below in detail. (Maxwell 2012, Fletcher 2017) A schematic representation of my data analysis is shown in figure 2.2.
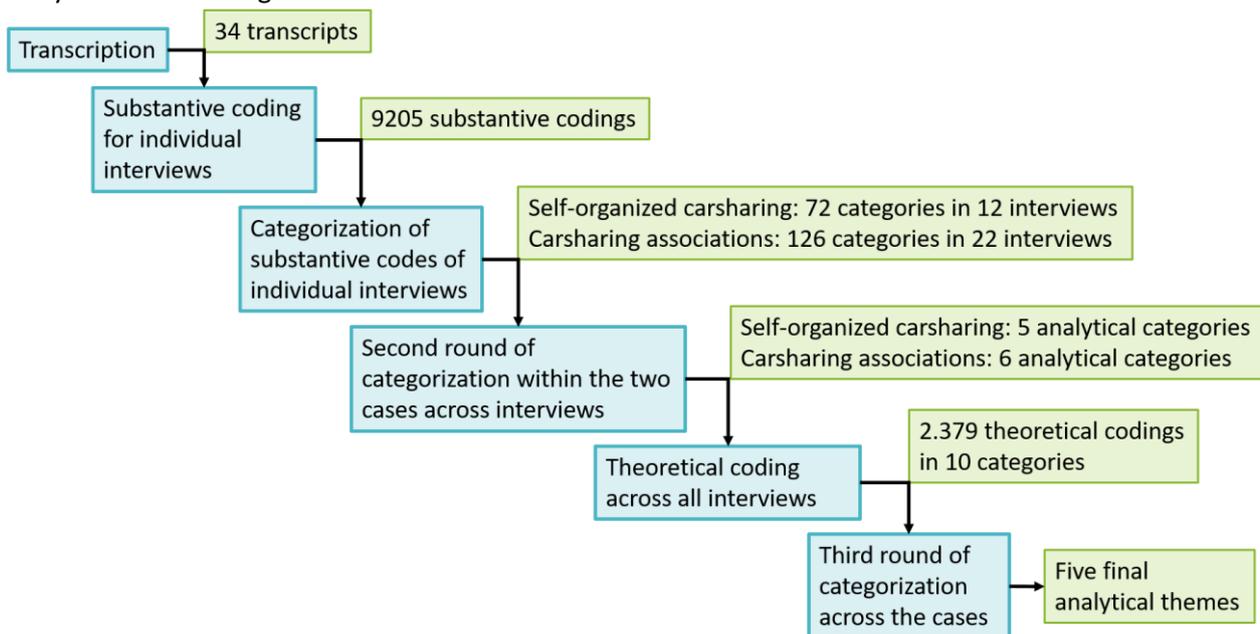
Figure 2.2: Schematic representation of the data analysis process.

The transcription of the interviews is often categorized as a step in the preparation for the following analysis. However, I regard it as the first step of analysis because it necessitates to pay close attention to the interview material and therefore allows a deep engagement with the data. During the transcription of the interviews I was already able to get an idea of topics that occur in multiple interviews and eventually became categories in the later coding and categorization process. Furthermore, engaging on this level with an interview before the next one is conducted, allowed for improvements in the interview guide. The whole

analytical process was accompanied by writing memos. During and after the analysis they serve for reflection, the initial formulation of interpretations and ideas and lead into first passages of text. (Charmaz 2006a)

I took the work by Amber Fletcher (2017) as starting point for my data analysis. From a perspective of Critical Realism the aim of empirical work is to identify tendencies and generative/causal mechanisms that are able to explain what is happening. From this results the assumption of Critical Realism that "*data are […] seen, not simply as 'texts' to be interpreted, or as the 'constructions' of participants (although they are this), but as evidence for real phenomena and processes that are not available for direct observation.*" (Maxwell 2012, p. 103) On an empirical level the tendencies and mechanisms are identified through following demi-regularities, basically topics that occur frequently, which are in the later analysis brought together with theories and concepts for describing the tendencies and mechanisms. (Fletcher 2017)

Two phases of coding: Substantive and theoretical

I applied the search for demi-regularities and their later connection to existing theories and concepts practically by using two phases of coding. The first phase was substantive coding followed by the categorization into topics for each interview and in a second categorization step into analytical themes for organized and private non-commercial carsharing separately. In the second coding phase I applied theoretical codes to all the interviews in order to relate existing theories and concepts to the before-derived analytical categories.

Both phases of coding provide content and guidance to derive an interpretation and understanding of what is happening in the field. The final analytical categories served as basis of the structure for the following main chapters of my dissertation. Together the two phases of analysis enable to draw a theory-infused picture of what is happening in the field and provide a *'thick description'* and an understanding of non-commercial carsharing. The coding was done using the qualitative data analysis software *MaxQDA*.

Substantive coding

The substantive codes mostly serve the purpose to provide a thick description and are only partially meant for the interpretation, although they naturally are an interpretation from my side. Through the substantive coding I was able to get a deep insight into my extensive interview data and the coding process informed the development of the theoretical codes, which enrich the thick description with interpretation and explanation of tendencies and mechanisms. (Maxwell 2012, Fletcher 2017)

In the substantive coding phase, I applied an open coding to the twelve interviews on private non-commercial carsharing and the 22 interviews in the carsharing associations. By applying open coding I ensured, that I get an in-depth understanding of what is happening in the field and that I am able to argue from a strong empirically grounded position. The open codes were very close to the data and more or less provided a summary of a certain passage that I deemed important to be included in my analysis. (Charmaz

2006b, Saldaña 2013) The open coding was applied to each interview individually without cross-referencing codes between the interviews. Each interview was coded without interruption, in order to not lose focus, dive deep into the interview data and get an understanding for the arguments and ideas used by the interviewees. Depending on the length of the interview I had between 167 and 452 substantive codings per interview, totaling 9.205 substantive codings in all 34 interviews, 6.039 for the carsharing associations and 3.166 for private carsharing.

The substantive coding was followed by three rounds of categorization in order to find themes within the interviews and later analytical categories across the interviews, which served as input for the theoretical codes and structure for the final study. After an interview was coded the substantive codes were grouped and sorted thematically. For each interview this resulted in four to eight categories (mostly five or six) with up to five levels of sub-categories. This condensed the content of the interview into a few main themes and statements. For the association interviews I ended up with 126 categories in 22 interviews and in the private interviews I had 72 categories in twelve interviews. These main ideas for each interview allowed me to bring the interviews for each of the two groupings into an analytical comparison. In a second round of categorization I sorted the categories of each interview into analytical categories for the carsharing associations and the private carsharing arrangements separately in order to identify the demi-regularities within them. This thematic grouping was undertaken by summarizing each category in a few sentences, printing those summaries and matching them based on their content. (Figure 2.3)
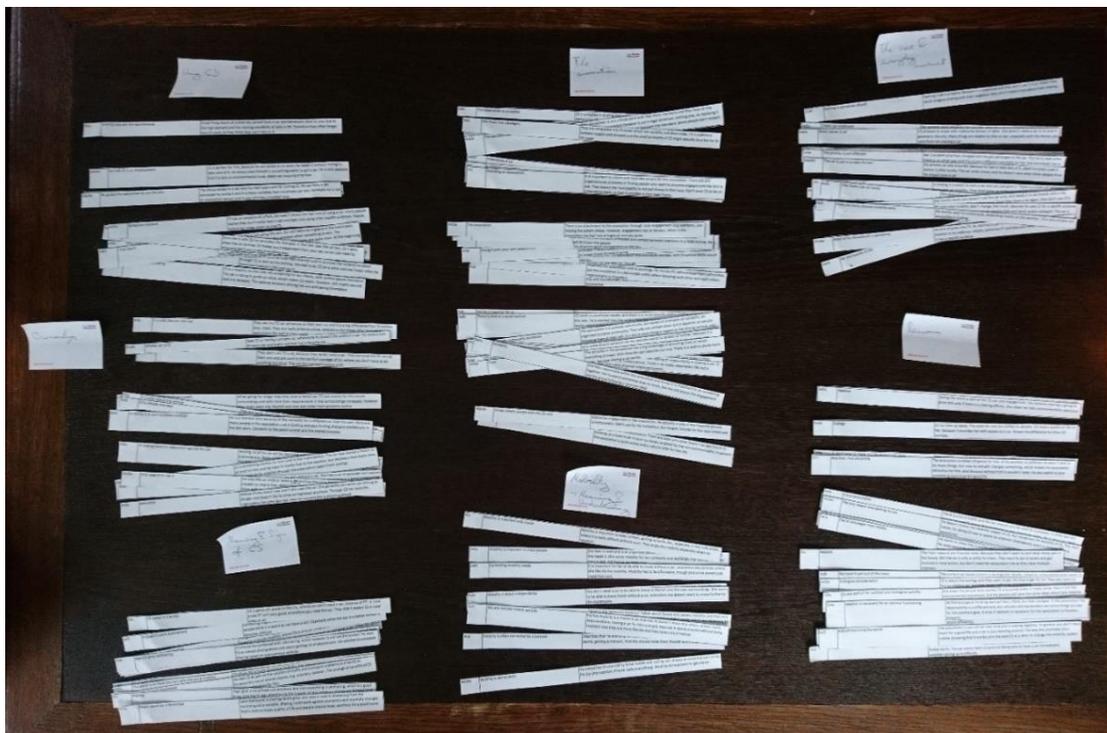
Figure 2.3: Sorting the categories of each individual interview into themes for each of the two cases.

The 126 categories of the association interviews resulted in six analytical themes and the 72 categories from the private interviews were sorted into five analytical themes. (Table 2.4)

Table 2.4: Categories for the interviews of the two forms of non-commercial carsharing.

Categories carsharing associations	Categories private sharing arrangements
Mobility: meaning & understanding	The arrangement
The car & everyday movement	Rules & Relationship
Carsharing: meaning & significance	The car
Reasons	Mobility is
The association	Reasons & critique
Using carsharing & ownership	

Within these categories each individual category it consisted of, was again looked into on the level of the raw interview data and summarized. In case one interview wasn't represented in a category I included information for that category from the missing interview if there was any. Based on these summaries, sub-groups within the categories were formed and further information was added (e.g. car ownership) or simplified (e.g. which reasons were brought forward), all of which allows a better overview over the different positions represented in my data, an in-depth and thick analysis and an easier starting point for composition of the text.

In a third round of categorization I brought the two form of non-commercial carsharing together, which resulted in the final overarching analytical themes, which formed the basis for the themes of the empirical chapters:

1) The arrangements / the association
   a. Rules and Relationship
2) The car and everyday movement
3) Mobility: Meaning and understanding
4) Reasons and Critique
5) Using Carsharing and Ownership
   a. Meaning and Significance of Carsharing

The main level of the substantive analysis however is the second level of categorization, where associations and private carsharing arrangements are separated. This is due to the two cases albeit having some thematic similarities are difficult to describe and summarize together. Thence, while the themes of the chapters are based on the overarching categories, the data pool for the chapters consisted on the second level categories of each form of non-commercial carsharing and the respective categories from theoretical coding. (Table 2.4 & 2.5)

Theoretical Coding

The second coding phase consisted of theoretical coding and was taken out after the categories on the second level were formed. This means that the building of the third level categories was also influenced by the outcome of the theoretical coding and an even deeper insight into the raw data. The applied theoretical codes were derived from theoretical concepts (e.g. everyday resistance, structure/agency), but also from categories that emerged from the substantive coding and categorization phase (e.g. social cohesion, the car as use-object, critique). The theoretical codes consisted of 70 codes in ten categories with one to eleven sub-codes in up to two levels. All 34 interviews were coded with the same theoretical codes, which resulted in a total of 2.379 theoretical codings. (Table 2.5)

Table 2.5: Theoretical categories, number of sub-codes and number of codings for all 34 interviews. The complete list of theoretical codes is listed in the Appendix 3.

Theoretical category	Number of sub-codes	Number of codings
Mobility politics	1	45
Uneven mobilities	3	28
Communication	2	74
Critique	5	307
Role of the car	5	261
Mobility is…	5	154
Commoning mobility	11 in two levels	289
Everyday resistance	7 in two levels	357
Change	11 in two levels	402
Community & relationship	10	462

The theoretical coding enabled a theory-driven empirical analysis and interpretation of the interview data and in addition to the final analytical categories allows a comparison across the two cases of non-commercial carsharing. As already written above, the theoretical codes were used as data material in the relevant chapters:

1) Chapter 4: Reconstituting automobility: Role of the car, Change, Mobility is…
2) Chapter 5: Re-embedding automobility: Ownership, Mobility politics, Critique, Uneven mobilities
3) Chapter 6: Community and collective identity: Community & relationship, Communication
4) Chapter 7: Commoning mobility: Commoning mobility, Community & relationship
5) Chapter 8: Discussion: Everyday resistance, Change

Together the two phases of coding enabled an empirically detailed and rich description of non-commercial carsharing, while allowing for a theory-driven interpretation of the data. During the writing process the analytical categories of the second and third level were consulted regularly and their codings formed the primary data corpus for the empirical chapters. Together with the theoretical codings they informed the internal structure of each chapter and enabled to find red threads and connections across codings, sub-categories, theoretical codes, interviews and the two cases.

PART II
Empirical Part

Chapter Three *Empirical Introduction: What is non-commercial carsharing?*

This chapter introduces the empirical part of my thesis. First, I will give a brief introduction and overview into the City and Greater Region of Munich to provide the socio-economic and socio-structural contextualization for the following chapters. The main part of the chapter introduces the two empirical cases of this work, carsharing associations and private sharing arrangements. I will start by providing a definition of non-commercial carsharing and will then briefly describe the historical dimension of the two empirical forms studied in Munich. Afterwards I will explain the basis characteristics of the two forms and give an insight into the large variety amongst the interviewees. I will frequently refer to individual people throughout this book, wherefore this chapter aims to introduce them and provide some context for each of them, making it easier to follow their appearances across the upcoming chapters. Due to the immense level of detail in 34 interviews with 42 people, I wasn't always able to connect all elements of each individual story. However, here I offer a starting ground for making these connections. The last part of this chapter introduces the following four empirical chapters.

1   The City and Greater Region of Munich

Before going more into detail about the case of non-commercial carsharing I want to briefly introduce the setting of my dissertation in the Greater Region of Munich. Within Bavaria, Munich is the economic, political and cultural center attracting not only a steadily growing long-term population (1.5 million in 2020) but also multiple million visitors, around six million alone for the yearly Oktoberfest. (muenchen.de 2019) The current population projections foresee between 1.7 and 2.0 million inhabitants for Munich until 2040, a further increase of up to 27%. (Kürbis 2019) In addition to the people living in the city of Munich, every day 394,000 people commute into Munich, while 'only' 186,000 are commuting out of Munich. (Stadt München 2019) Furthermore, Munich is the densest city in Germany with nearly 5,000 inhabitants/km² (approximating up to 16,000 inhabitants/km² in central neighborhoods), which overall makes space a much contested resource. (Statistisches Amt München 2020) In the districts and municipalities adjacent to Munich an additional 1.3 million people live partially experiencing an even stronger population growth than the city itself. (Bayrisches Landesamt für Statisik 2018) Here, space isn't the biggest issue, but the sheer amount of traffic, especially by cars, is a major concern of municipalities in the region. These factors – limited space and a growing population with growing transport needs – put an immense pressure on the distribution of space not only between housing, offices, hotels, daily amenities, shopping and green spaces, but also on the distribution of space and public spending regarding the transport infrastructures needed to connect all these functions.

In order to understand the mobility system in Munich one has to go back at least to the Second World War when Munich was hit by 73 airstrikes destroying 50% of the city and up to 90% of the old town.

(wikipedia.de 2020) After the war Munich reconstructed large parts of its urban fabric, including the transport infrastructure. Although the city strived to conserve most of the historic streetscapes and buildings, the reconstruction massively favored roads and the proliferation of private car traffic. Already during the Second World War, but especially afterwards the two inner ring roads were planned, built and finished until the 1972 Olympics. The Olympics also brought a massively improved infrastructure for public transport through the construction of a suburban rail tunnel under the city center, the inauguration of the subway and the largest expansion of the tram network. Today, however, the transport infrastructure in Munich is at its limits. The expansion of the public transport network has not kept pace with the population increase and the growing ridership is bringing the transport network to its absolute limits. (Stadtratshearing 'Mobilität' 2018) The road network can only be expanded by going underground, yet the number of cars in Munich and the surrounding municipalities is constantly rising. (For Munich see figure 3.1)
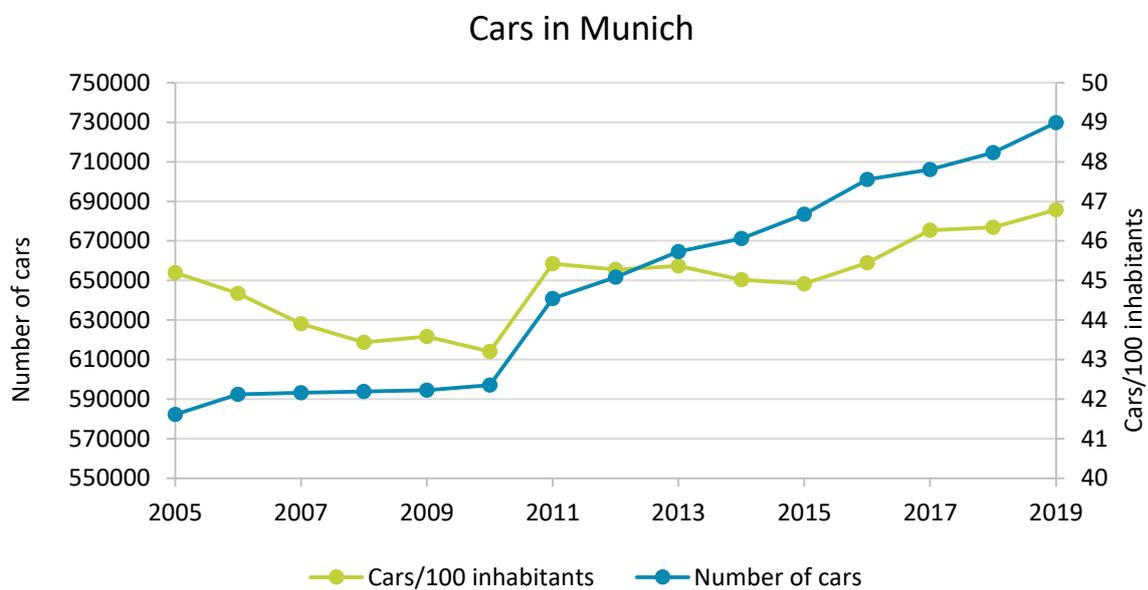
Cars in Munich

Figure 3.1: Total number of cars (blue) and number of cars per 100 inhabitants (green) in Munich for the years 2005-2019. (Statistisches Amt München 2020)

With around 47 cars/100 inhabitants Munich has one of the highest metropolitan car densities in Germany, which is amongst other things supported by the omnipresence of *BMW* – the *'BMW World'* is amongst the Top-10 *Trip advisor* recommendations – and the comparatively high average income in Munich and the Greater Region. (Bayerisches Landesamt für Statistik 2019) Last but not least, only in the last ten years has the city government started to take cycling and the provision of cycling infrastructure seriously. (Tschoerner 2015)

Thence, the constantly growing population and their mobility behavior lead to ever more crowded streets, cycling paths, buses, trams, subways, suburban trains and walkways, forecasting a constant grid lock for Munich's streets in 2030. (Stadtratshearing 'Mobilität' 2018) Overall, the modal shift away from the

private car hasn't been large enough to reduce traffic problems or to meet goals for the reduction of carbon and other emissions, neither in the city of Munich nor in the Greater Region, also due to the growing number of car kilometers travelled. (Figure 3.2)

Modal split: City of Munich and Greater Region of Munich
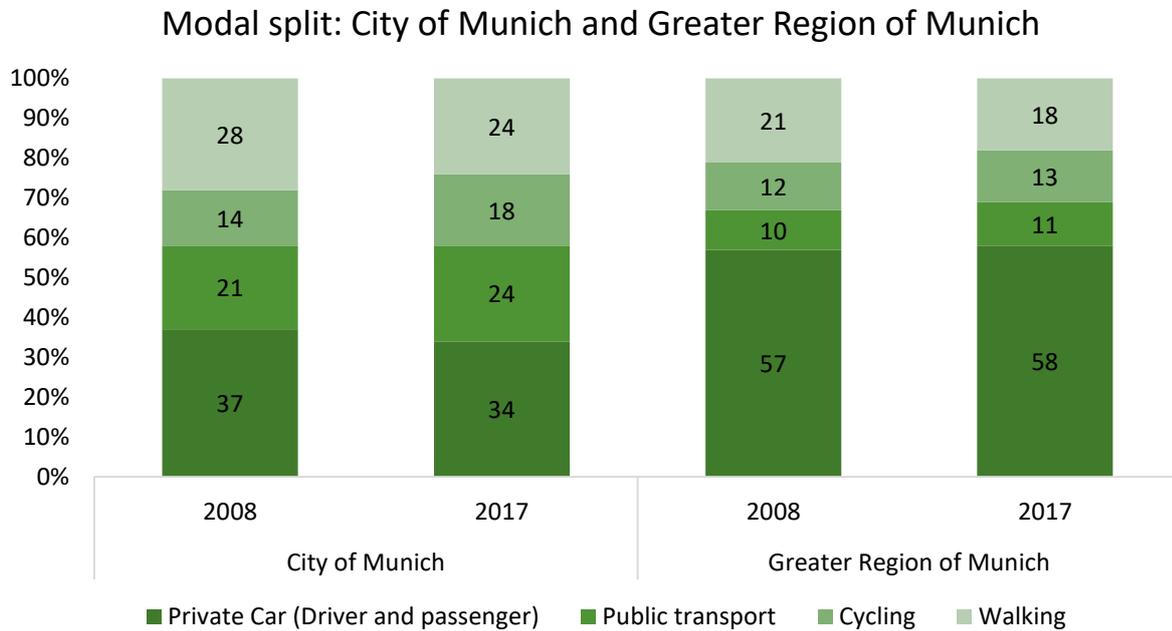
Figure 3.2: Modal split for Munich and the Greater Region in the years 2008 and 2017. (Belz et al. 2010, Landeshauptstadt München 2020)

As part of the solution to tackle these problems the city is accepting, welcoming and developing different forms of sharing mobilities. In 1999 Munich already had its first bicycle sharing system, which was overtaken by the *German Railways* and is now called *Call A Bike*. (Hirn 1998) In 2015 the city inaugurated its own bicycle sharing system, *MVG Rad*, which by now has expanded into the Greater Region counting around 3200 bikes. A third bicycle sharing system, *o-bike*, failed in 2018 by the hands of vandalism by the city population. Since 2019 electric scooter sharing is available in the city and there are multiple thousand E-Scooters by five different providers present in the streets of the city. Munich is also one of the few cities in Germany that allows *Uber* to operate and with *Clevershuttle* and *IsarTiger* there are further ridesharing services available. But most of all, carsharing is rapidly expanding in Munich. *ShareNow*, the joint venture of BMW's *DriveNow* and Daimler's *Car2Go*, operates 1200 cars mostly within the middle ring road and a few areas outside of town (e.g. the airport, business parks, universities). (ShareNow 2020) Additionally, *flinkster*, the carsharing by the German Railways, operates 120 cars in Munich, operating with a neighborhood parking system, allowing a car to be parked in a designated neighborhood instead of a fixed parking space. Also *oply* operates 210 cars with a neighborhood parking system. Since 2019 year *miles* and *Sixt carsharing* are also operating in Munich. The biggest stationary carsharing company, *StattAuto*, is also the oldest carsharing provider (since 1992) and operates 450 cars at 125 stations. (StattAuto 2020) Overall carsharing is quite present in the streets of Munich

and 20% of the inhabitants are member of at least one carsharing service. (Landeshauptstadt München 2020) Apart from the city-owned bike sharing, *StattAuto* is the only company that operates their sharing service outside of the city limits, leaving the Greater Region nearly without any of the commercial sharing offers. The only carsharing that is provided outside of the city limits are the carsharing associations, wherefore the carsharing membership also drops to 12% in the near vicinity of Munich and to 3% in the Greater Region. (Landeshauptstadt München 2020)

Summing up, since many years Munich is a fast growing city experiencing extensive space shortages and traffic problems with public transport and the road network at its limits. Also the neighboring districts and municipalities grow continuously and suffer from the large amount of commuter traffic into Munich. The number of cars is constantly increasing, leading to an insufficient decrease in car travel and continuing car dependence in the Greater Region. The main point of this brief introduction to Munich and the Greater Region is that these conditions, however, are favorable for sharing mobilities of any kind and that from early on carsharing and bikesharing have been present in the streets of Munich and as I will detail below the Greater Region of Munich is one of the cradles of rural carsharing in Germany. Another important point is that, while the infrastructural conditions are favorable for sharing mobilities, the social conditions are not particularly so, as the high private car ownership rate and high incomes as well as the cultural identification with a large car manufacturer indicate a strong orientation to and dependence from the private car.

2   Introduction to the cases

After this brief outline of the context of the City and Greater Region of Munich I now give a brief introduction to the empirical data. I will start with presenting my definition of non-commercial mobility sharing and an overview of the data and then introduce the two cases that I investigated, carsharing associations and private carsharing arrangements together with the people I interviewed.

I define non-commercial mobility sharing as the shared purchase, ownership and/or usage of an asset of mobility (e.g. car, cargo-bike) by an institutionalized process within a defined, local group. This can be private between friends, neighbors and/or the extended family or formally organized through a non-profit organization. Especially in private sharing arrangements the border between lending and sharing can be fuzzy and unclear. However, I want to look at everyday practices that can be called institutionalized, because they take place routinely and follow certain rules, while also using some sort of tool for their institutionalization, e.g. a calendar, verbal or written agreements or a messaging group. The essential point from my perspective is that there is a process of habitualization as I regard this a necessity for social change. Sharing the asset of mobility shouldn't create a monetary surplus, because I particularly want to explore how forms of shared movement that are organized and operate beyond a market rationality of growth and profit-maximization relate to the goal of a socio-ecological mobility transition. Following this definition in my fieldwork lead me

to decide to not include *StattAuto* as a form of non-commercial carsharing. Albeit its profits serve a charitable purpose, I considered its size of 12,000 members and organizational structure as Limited Liability Company as too far from the kind of carsharing I am interested in. This left me with two cases: carsharing associations in the Greater Region of Munich and private sharing arrangements of cars and cargobikes between friends, neighbors and extended families mostly in Munich. As written in the previous chapter I conducted 34 interviews, 22 in carsharing associations and 12 in private car- & cargobikesharing arrangements. (Table 3.1)

Table 3.1: Interviews in the different forms of non-commercial sharing mobilities.

Carsharing associations	Private car- & cargobikesharing
▪ 22 interviews with 24 interviewees	▪ 12 interviews with 18 interviewees
▪ 8 associations:	▪ 11 private carsharing arrangements
▪ Grafing (9)	▪ 1 private cargobikesharing arrangement
▪ Markt Schwaben (4)	
▪ Königsbrunn (3)	▪ Arrangements mostly between 2 households with 2 to 4 participants
▪ Vaterstetten (2)	
▪ Anzing (1)	▪ Interviews in groups from 1 to 4 persons
▪ Erding (1)	
▪ Freising (1)	▪ Different stages (planned to terminated) and different models (friends, neighbors, extended families; contracts, loosely)
▪ Grasbrunn (1)	
▪ Different stages (not founded -> oldest) and different models ('Vaterstetten', *Flinkster*)	

The 22 association interviews were conducted with members of eight different associations in different development stages from one association in the founding process, to newly established ones until the oldest association in the region. The number of interviews per association ranged from one to nine and apart from two interviews, the interviews were conducted with only one person. The private sharing arrangements are more diverse in character. They differ in stages ranging from arrangements in the making to already cancelled arrangements and models ranging from sharing between friends, neighbors or extended families through contracts, verbal agreements and from incidence-to-incidence. The sharing arrangements usually consisted of two households with two to four people sharing the car or cargobike. Some of the interviews were conducted with the whole group of sharing the car.

In the following two sections I will do two things for each of the two cases. First, I will provide an overview of the two cases of non-commercial carsharing explaining the common characteristics and history of the carsharing associations and providing an overview of the structures of the private sharing arrangements. Second, adding to the socio-demographic presentation of the members, I will introduce each of the 34 interviews and its 42 participants in relation to their sharing activity. (Table 3.2 provides on overview of the interviews, its participants, their pseudonyms and a few details on their sharing) Throughout the next chapters I will frequently refer to these individual people, wherefore I consider it important to provide at least a vague idea about their relation to non-commercial carsharing.

Table 3.2: Overview of all interviewees with pseudonym, form of sharing, position/relationship, duration and car ownership status. Y = Yes, N = No.

Interview	Pseudonym	Form	Position // Relationship	Member since // Duration	Car ownership (additional)
Karl	Karl	Association	Board & founder	26 years	N
Clara	Clara	Association	Member	20 years	N
Rosa	Rosa	Association	Board	12 years	N
Antonio	Antonio	Association	Board & founder	25 years	Y
Frigga	Frigga	Association	Member	6 years	N
Robert	Robert	Association	Member	Approx. 8 years	Y
Helen	Helen	Association	Member	1,5 years	Y
Henri	Henri	Association	Extended board	Approx. 8 years	N
Maxim	Maxim	Association	Member	1 year	Y
Ulrike	Ulrike	Association	Member	4,5 years	Company car
Hannah	Hannah	Association	Member	9 years	N
Mariarosa	Mariarosa	Association	Board & founder	20 years	Y
Erich	Erich	Association	Member & warden	7 years	N
Bob	Bob	Association	Member	Approx. 5 years	Y
Elmar	Elmar	Association	Member & warden	At least 6 years	Y
David	David	Association	Member	1 year	N
Family Schuster	Friedrich	Association	Member	2 years	Y
Family Schuster	Sophie	Association	Member	2 years	Y (with Friedrich)
James	James	Association	Member	2 years	N
Family Schmidt	Christa	Association	Founder	To be founded	Y (own)
Family Schmidt	Georg	Association	Founder	To be founded	Y (own)
Simone	Simone	Association	Board & warden	15 years	N
Murray	Murray	Association	Board & founder	4 years	N
Jean-Paul	Jean-Paul	Association	Member	1,5 years	N
Karl-Theodor	Stella	Private	Friends	3 years	Y (camping van)
Karl-Theodor	Cinzia	Private	Friends	3 years	N
Karl-Theodor	Béla	Private	Friends	3 years	Y (camping van)
Karl-Theodor	Tariq	Private	Friends	3 years	N
Raya	Raya	Private, StattAuto	Neighbors	14 years	N
Ivan	Ivan	Private	Extended family	8 years	N
Beverly	Beverly	Private	Friends	12 years	N
Suzanne	Suzanne	Private	Friends	2 years	N
Judith	Judith	Private, StattAuto	Friends	16 years	N
Karin	Karin	Cargobikesharing	Neighbors	1,5 years	Y
Mountain Hut	Nancy	Private	Friends	0,5 years	N
Mountain Hut	Louis	Private	Friends	0,5 years	N
Selma	Selma	Private	Neighbors	To be founded	N
Martha	Martha	Private	Extended family	3 years	N
Walter	Walter	Private, StattAuto	Friends	10 years	N
Camper	Mimi	Private	Neighbors	5 years	N
Camper	August	Private	Neighbors	5 years	N
Camper	Ellen	Private	Neighbors	3,5 years	N

The carsharing associations

The first carsharing association in the Greater Region of Munich was founded in December 1993 in Vaterstetten, a municipality of then approx. 19,000 inhabitants along the suburban railway in Munich. It originated from five families who started sharing a car together in early 1992 and with more families participating in the sharing arrangement it became necessary to have a more regulated and legal framework. At the same time similar initiatives started in the area, in other parts of Germany and especially in Switzerland. (Petersen 1995, Franke 2001) Albeit these initiatives didn't know of each other yet, the idea of owning and using cars together gained traction, especially in the slowly growing green movement. The basic principle of the carsharing association is easy. The association as legal entity is able to buy, own and insure cars. When a person becomes a member, they pay an entry fee and thereby 'buying' their part of the associations cars and the allowance to use the cars. Therefore, practically the cars are communally owned. All cars have fixed parking spots, sometimes provided by the municipality, but often in garages or private parking spaces of the members, wherefore the associations operate as classic stationary carsharing. As I will explore in great detail later, the members not only provide parking spots for the cars, but are engaged in the association in many different ways, whereby the associations are nearly completely self-organized.

In the first years the usage of the cars had to be communicated with all members via telephone. But already in the early years of the internet in the late 90s engaged members of the association in Vaterstetten developed an online booking system, through which the cars could be booked via an internet platform. This system was developed further and is now used by more than 50 association in the region and all across Germany for a low maintenance fee, partly enabling the low cost at which the associations can offer carsharing in rural areas. Apart from the booking system, Vaterstetten also gives a lot of support for founding new associations by providing exemplary constitutions, its head of the board continuously traveling to new local initiatives for counseling and also by being a member of the board of the national association for carsharing 'Bundesverband Carsharing' (BCS). Apart from Markt Schwaben, Grafing, Freising and Königsbrunn all the associations I interviewed people from were founded with the help of Vaterstetten. Markt Schwaben and Grafing have been and are in close contact with the association in Vaterstetten and as all the other associations have agreements for cross-use of the cars. Thereby, the association in Vaterstetten served and serves as the local blueprint for a carsharing association.

When I started to investigate non-commercial sharing mobility in Munich I actually didn't know about the existence of the carsharing associations. Yet, these associations actually formed the starting point for carsharing in Germany and developed into companies or non-profit-organizations in bigger cities. In the rural areas of Germany though they provide the only form of carsharing, due to a lack of commercial alternatives. Karl, who is one of the founders of the association in Vaterstetten and helped in founding many other

associations, told me that at the beginning, the associations were clearly oriented towards environmental protection, which is most visible in the purpose of the association in the statute:

"The association stands up for human- and ecologically compatible transportation and for a reduction of the environmental burdens of transport. This particularly includes:

- *A reduction of motorized traffic;*
- *The spare use of energy, space and resources;*
- *The priority of environmentally compatible modes of transport;*
- *An environmentally friendly and social driving style."* (Vaterstettener Auto-Teiler 1993, p. 1)

However, over the years the environmental goals – heavily enforced by forbidding fast driving and using the carsharing as a second car – moved into the background and were complemented with social goals and the wish to change how mobility is practiced in everyday life: "*First, the social aspect came by saying, well you can cheaply drive a car with carsharing. […] It became more diverse and the ecological thought, also as a motivation, was sidelined and the mobility thought [of we want to change mobility], became foregrounded.*" (Karl, Vaterstetten) What this means in practice will become clear in the empirical chapters, whereas for now I will present the 22 interviews with overall 24 association members. (Table 3.3)

Table 3.3: Overview of the 24 association members interviewed in the 22 interviews in carsharing associations. Name in brackets indicate how the interview is referenced in the text.

Karl, Vaterstetten	Karl co-founded the association in Vaterstetten and helped in founding many other associations, which gave him the nick-name 'carsharing pope'. He was board member of the national carsharing association and still is a board member in Vaterstetten.
Clara, Vaterstetten	Clara moved with her family to Vaterstetten in 1998 and joined the association soon. The association enabled them to continue their life without a car until today and her family was even featured in a magazine as the 'car-less family'.
Rosa, Markt Schwaben	Rosa quickly became a member of the board in Markt Schwaben after she joined the association twelve years ago. She is in close contact with Karl and active in the regional and international connection of small-scale carsharing. Rosa lives without a car since a long time.
Antonio, Markt Schwaben	Antonio is a founding member of the association in Markt Schwaben. He became a board member twelve years ago together with Rosa, when the former head of the board passed away. It was his initiative to expand the board from one to three members. His family has a private car.
Frigga, Markt Schwaben	Frigga is one of the few people I interviewed who joined the association because of monetary needs. She was a car warden for a while and enjoys to participate in the social activities of the association as it provides her with social contact.
Robert, Markt Schwaben	Robert joined the association in Markt Schwaben briefly after he and his family moved from Dresden and his car broke down and was an active

	user for many years. Today they own a private car again and only use carsharing in case of usage conflicts.
Helen, Grafing	Helen and her husband have a private car, however Helen sometimes needs a car to pick up her son, wherefore they joined the carsharing association in Grafing one and a half years ago.
Henri, Grafing	Henri and his wife joined the association when their kids started to drive and they didn't want to buy a third car. Over the years, carsharing was so practical, that they didn't buy new cars, when the old ones broke, wherefore they now life car-free.
Maxim, Grafing	Maxim joined the association a year ago, with the aspiration of sparing the good shape of his privately owned soon-to-be antique car, by using carsharing in bad weather and everyday trips.
Ulrike, Grafing	Ulrike became a member shortly after she moved to Grafing five years ago. She only got to know carsharing in Grafing, but quickly gave up her private car in favor of carsharing and also found social contact through the association.
Hannah, Grafing	Hannah moved from Munich to Grafing and decided to get rid of her car because she does everything by public transport. Only after that decision she learned about the association and joined in order to be able to uphold leisure trips to the mountains on weekends.
Mariarosa, Grafing	Mariarosa is a founding and board member of the association in Grafing. She and her family had a private car every once in a while, depending on the regularity of their car use.
Erich, Grafing	Erich joined the association in case he and his wife need a car at the same time and recently is happy that the kids can use the cars. Shortly after the interview he became a car warden and gave up his private car.
Bob, Grafing	Bob owns a private car and several motorcycles, however uses the carsharing cars for transporting things and to spare his private car (a sports car). He openly criticized the association about not being aware of security problems in the way it functions.
Elmar, Grafing	Elmar and his wife got rid of their second car when joining the association. With their remaining car he is ridesharing to work. He gives talks about the energy and transport transition and launched several sharing mobility related projects in Grafing and the region.
David, Königsbrunn	David became a member of the association in Königsbrunn in order to use carsharing to get to work in winter. Before joining he calculated the costs of carsharing against buying a used car.
Friedrich, Königsbrunn (Family Schuster)	Friedrich and his wife joined carsharing in order to practice their anticipated carless future. However, they are debating to buy an electric car when their own breaks, because they are worried about not getting a carsharing car in case of an emergency.

Sophie, Königsbrunn (Family Schuster)	Sophie, Friedrich's wife, shares the worries of Friedrich about the availability of carsharing. Yet, she is more inclined to carsharing as she also sees the social benefits besides the ecological ones.
James, Königsbrunn	James became a member of the association because he couldn't rely on his own car anymore. He is furthermore a driver for the driving service for elderly and disabled people run as cooperation between the association, the local timeshare and the municipality.
Christa, Anzing (Family Schmidt)	At the time of our interview, Christa and her husband were in the process of founding the association in Anzing, initiated by the local Green Party and in close cooperation with Karl. They are highly dependent on two cars and Christa is eager to get rid of at least one.
Georg, Anzing (Family Schmidt)	Georg, Christa's husband, is more worried about having to buy a third or fourth car for their kids, instead of living with less than two cars. Albeit they are founding the association, neither of them necessarily wants to become part of the board.
Simone, Freising	Simone is a board member of the association in Freising, doing the finances, the introduction of new members and is also a car warden. The social activities of the association are an important personal and organizational aspect for her.
Murray, Erding	Murray is founder and board member of the association in Erding, which used to be part of the association in Markt Schwaben. Since practicing carsharing he and his wife got rid of their private car.
Jean-Paul, Grasbrunn	Jean-Paul and his wife used to live in Vaterstetten for many years and moved to neighboring Grasbrunn, where they joined the carsharing association. After finishing their studies they needed a car more frequently and didn't want to buy a private car.

Private sharing arrangements

Because the private sharing arrangements are all quite different from each other, I will first introduce the twelve interviews with overall 18 people. (Table 3.4) Afterwards, I will provide a categorization along their character and give an overview of the relationships, the rules and regulations and the communication on which they are based.

Table 3.4: Introduction of the 18 people in the twelve interviews in private sharing arrangements. Name in brackets indicate how the interview is referenced in the text.

Stella (Karl-Theodor)	Stella, together with Cinzia, Béla and Tariq, privately shares a car with the name of Karl-Theodor. The group started sharing three years ago, after planning and searching for approximately two years.
Cinzia (Karl-Theodor)	Cinzia knows Stella through their studies. When they started sharing Karl-Theodor they were living close to each other, which supported the idea for sharing the car.

Béla (Karl-Theodor)	Béla is Stella's boyfriend and together they already own a camping van, which they however only use in summer.
Tariq (Karl-Theodor)	Tariq is Cinzia's boyfriend. He and Cinzia don't own a car.
Raya	Raya and her husband used to share a car with their long-term neighbors and friends. In addition to the privately shared car, they used StattAuto to solve usage conflicts. The arrangement ended after 14 years, because the usage conflicts increased during the school holidays.
Ivan	Ivan is part of the only electric carsharing in my sample and one of the two who doesn't live in the City of Munich. He and his extended family (father and brother-in-law) used to own a private car each, which were given up after they started sharing.
Beverly	Beverly shared two cars with different people over the last 12 years. The first sharer was a close friend of hers who suggested it. The second sharer was a more distant friend to whom she suggested sharing the car.
Suzanne	Suzanne is the only person in my sample, who uses an app to share her private car with friends. The app and the required hardware in the car were given to her for free as part of a pilot project of the car manufacturer.
Judith	Judith got to know her co-sharer through the kindergarden her son went to. Since 16 years now, they shared several cars, facilitated by them living close to each other. Apart from sharing a car they also developed a loose friendship.
Karin	Karin is the only person not sharing a car, but a cargobike and a bike trailer with the neighbors from the joint building venture they are living in. Their kids also go to the same daycare. Karin and her husband own a private car.
Nancy (Mountain Hut)	Nancy only recently started sharing her car with Louis. They know each other from working at the same mountain hut during summer. Before sharing Nancy's car they thought about getting a camping van together.
Louis (Mountain Hut)	During the time working at the hut, Louis was using the car while Nancy was on the hut, which gave the spark for sharing.
Selma	At the time of the interview Selma and her husband were developing a private sharing arrangement with their neighbors, also because carsharing isn't available where they live.
Martha	Martha and her husband are regularly using the car of Martha's parents. The parents don't understand it as carsharing, however Martha and her husband do and habits and routines developed in relation to it.
Walter	Walter and his wife shared two cars with his brother-in-law and his wife for several years. After having a private car for a while, they now only use StattAuto.
Mimi (Camper)	Mimi, Ellen and August are privately sharing a camping van. The arrangement started between Mimi and Ellen who looked for additional sharers to cover the costs. Mimi initiated the agreement by asking her

	neighbor Ellen on the street if she could borrow the van for vacation, which is also her main use.
August (Camper)	Ellen is the original owner of the camping van, however, Mimi and August each bought a share of the van, wherefore they share the ownership now. Ellen is mainly using the van for her everyday trips and only rarely does long vacations with it.
Ellen (Camper)	August joined the agreement approx. two years after it started, taking over the position of someone who left the agreement. Since he joined four years ago, the group is not taking in new sharers, due to the age of the car. His main use are also vacations. None of the three owns a private car.

A categorization of the private sharing arrangements is rather difficult. This said, the kind of order I am presenting is a simplification and one of many possible categorizations. My intent is not to provide ready-made boxes, but to show the range of possibilities of private carsharing. Table 3.5 shows a summary of the categorizations.

Table 3.5: Overview of the three possible categorizations of the private sharing arrangements.

Arrangement	Character	Relationship	Rules	Regulation	Communication
Karl-Theodor	Project	Friends	Medium ('contract')	Medium	Messaging
Raya	Project	Neighbors	Many	Medium	Calendar on the door
Ivan	Project	Extended family	Few	Low	During common dinners
Selma	Project	Neighbors	Undecided	Unknown	Unknown
Walter	Project	Friends & extended family	Medium	Medium	Early-on need communication
Camper	Project	Neighbors & Strangers	Many (contract)	Medium	Shared online calendar
Beverly	Coincidence	Friends	Few	Low	Messaging
Suzanne	Coincidence	Friends	Few	Strong	App, Messaging
Judith	Coincidence	Acquaintance	Few	Strong	Messaging
Karin	Coincidence	Neighbors	Few	Low	Coincidential meetings
Mountain Hut	Coincidence	Friends	Few	Low	Messaging
Martha	Coincidence	Extended family	Few	Low	Incident-by-incident

The first categorization goes along the character of the sharing arrangement as either project or coincidence. The project arrangements usually were planned for a longer time and developed from a vague idea into a concrete and tangible sharing project. This can either be an expression of a common endeavor between friends – *"It just somehow is a project and not just a vehicle."* (Karl-Theodor) –, a pragmatic and money-saving solution for car ownership and usage – *"…actually found a pragmatic solution […] we have this VCD-contract which contains the basic rules."* (Camper) – or an ideological project: *"…somehow it is not cool to own a car […] in principle it should be possible and then we four sat together."* (Walter) Other projects had

more of a coincidental character, were not planned much in advance and often developed spontaneously – *"Well, his question came really spontaneous and then I just said Yes. […] He told me the costs and I just gave him half."* (Beverly) – or out of discussions about the car: *"We met more often and talked about the car and what stupidity it is that we have two and then it developed. It wasn't a big story. That was…and then we said, let's do it."* (Judith)

A second categorization can be made according to the type of relationship between the sharers. In the cases I looked at sharing took place between friends, neighbors, extended family, strangers or a mix of these. It doesn't seem like the type of relationship between the sharers has a great influence on the character of the sharing arrangement or on the third categorization of rules and regulation. It is rather individual character traits of the sharers that influence the character and the rules and regulations of the arrangements. However, the relationship might become important in case serious problems occur, such as accidents, but I wasn't able to investigate this.

In the third categorization along the rules and regulations of the private sharing arrangements the complexity and differences of 'only' twelve arrangements fully come to the fore. As rules I defined the actual rules that were agreed on for sharing the car together, whereas regulation refers to how strictly these are enforced and followed. As visible in the overview, the type of arrangement can but must not influence the amount or the strictness of the rules in the arrangement. There is a tendency for coincidental arrangements to have less rules, at least on a written and formal level: *"Nobody can tell us which rules to follow and how we do this carsharing, that I think is the most important, because we aren't rule-following people at all."* (Mountain Hut) Nancy and Louis explicitly said they don't want to follow externally established rules as in commercial carsharing. Thus they didn't make many rules, but agreed on the bare minimum financially and everything else is dealt with on an incident by incident basis. Contrasting this is the project agreement Walter had, where they were actually afraid that sharing a car endangers their friendship, wherefore they made not only more official rules but also followed a strong early-on communication about potential problems: *"We have to make clear rules how the car is shared from the beginning. […] Address problems timely, address them honestly and try to avoid conflicts by talking very very early openly with each other."* (Walter) These rules were followed quite attentively, always leaving decisions to the whole group. A last example, somewhere in between, is the camping van sharing where the rules for sharing are fixed in a contract, which however in practice prove quite flexible as needs for the car are negotiated between the sharers: *"Because we just know each other, we can say: 'You are signed up, I need to go here, how important it is for you, can we switch or could you do without it?'"* (Camper) The communication between the sharers is so diverse that it evades every attempt of categorization, also because the agreements came into being under quite different technological conditions. Nevertheless, across all private arrangements communication between the

members was deemed an essential aspect of sharing a car together be it instantly via *WhatsApp*, at family dinners, at coincidental meetings, via e-mail or a shared calendar.

These categorizations don't serve a specific analytical purpose throughout the text, also because of their lack of statistical representation. Rather, they are supposed to offer an overview of the empirical data and make it easier to follow the individuals across the chapters by providing some context about their arrangements. Furthermore, it allows readers to retrace the connections and conclusions I made, while leaving space for their own interpretation through making the data base as transparent as possible.

Structure of the empirical chapters

The empirical part of this study is structured into four chapters, which regarding their content derive from the analytical themes described in the chapter on methods. The first and second empirical chapter focus on the level of the individual carsharer, whereas the third and fourth focus on the collective level and effects of non-commercial carsharing. (Figure 3.3)

Analytical themes		Chapters
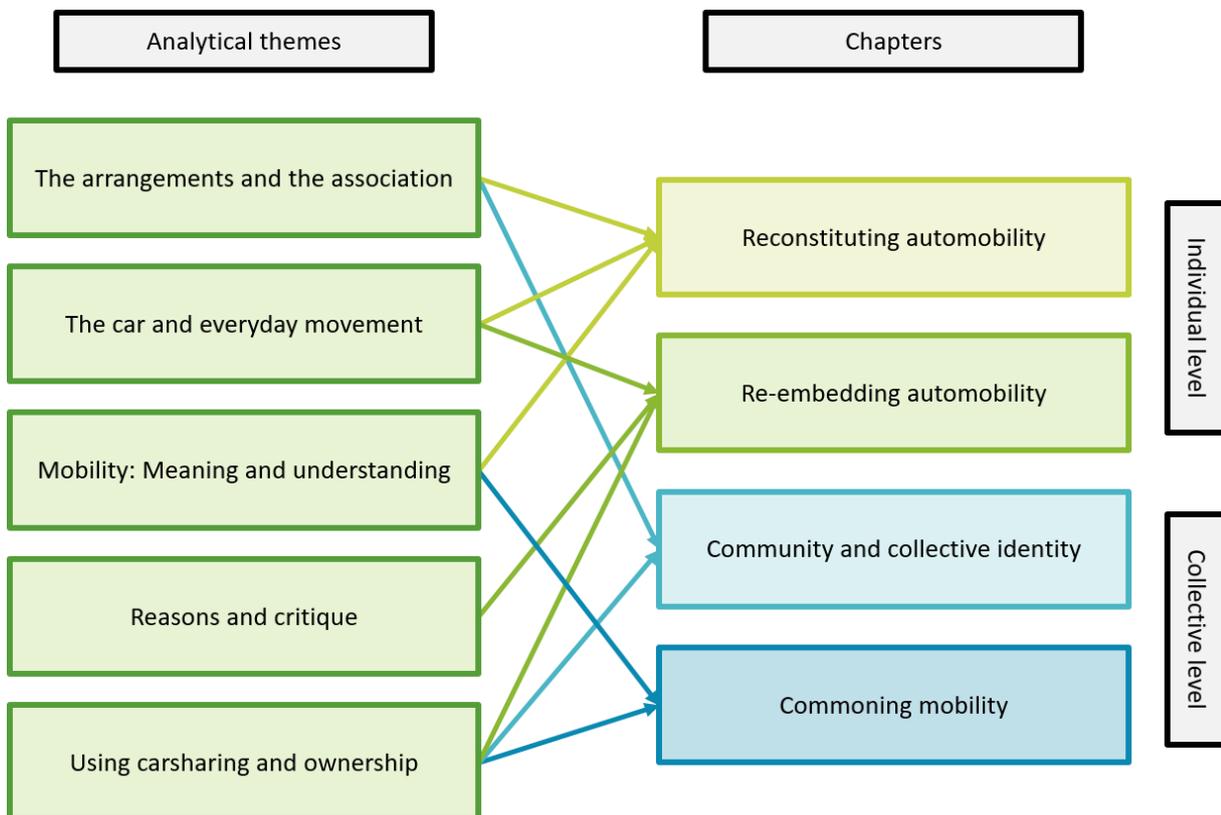
Figure 3.3: Relationships between the analytical themes and the empirical chapters.

Taken by itself, each chapter looks at the data through a different window with a different perspective and analytical argument. At the beginning of each chapter this perspective and argument are introduced theoretically, then empirically traced and unfolded in two empirical sections and lastly discussed in relation to the overall research interest and questions.

Chapter Four *Reconstituting automobility: Changing meanings of the car and (auto)mobility*

In this first empirical chapter I will present data arguing for a reconstitution of automobility through non-commercial carsharing, towards a more ambivalent formation of the meanings attached to the car in specific and the meaning of (auto)mobility in general. First, I will outline relevant theory on automobility, its systemic nature, the role of its meanings and the dialectic of freedom and coercion present in automobility. Second, the following two sections present interview data related to the reconstitution of automobility in terms of the changing meaning of the car from status symbol to object of utility and the meanings of (auto)mobility from freedom to necessity. The changing meanings of the car and automobility bring the coercive aspects of automobility to the fore, which are widely recognized by non-commercial carsharers. Thereby, automobility isn't the sole means of liberation anymore, but rather ridden with ambivalence. Third, the last section discusses this data with the theory presented before and argues that the ambivalence towards the car is an expression of the cracks and fissures in the hegemonic system of automobility. Thereby, non-commercial carsharing alters the production and reproduction of the system of automobility and the automobile subject through the emergence of alternative automobile practices, meanings, identities, subjectivities and cultures.

1   The system of automobility and the dialectics of freedom and coercion

The system of automobility

From the early 20th century on, when mass-motorization started with the Ford Model T in the United States, the car had and still has an immense influence on societies around the globe. To understand this influence however, it is important to not think of the car as an isolated object, but as central piece of an interrelated system that was produced and is continuously reproduced: the '*system of automobility.*' (Urry 2004, Paterson 2007, Conley and McLaren 2009b) According to Urry the system of automobility is set together by seven components. First, the central object of automobility, the car, is also the central manufactured object in modern capitalism and from its industry emerged the definitive concepts of Fordism and Post-Fordism. Second, the car is the second biggest item of individual consumption and provides status through sign values. Third, automobility is a complex interlinkage of different industries. Fourth, automobility is the predominant form of individual mobility and subordinates other forms of mobility, substantially reorganizing space. Fifth, it is the dominant culture of what constitutes the good life. Sixth, automobility is the single most important cause of environmental resource use and destruction. Finally, automobility powerfully connects humans with machines creating the hybrid assemblage of the '*car-driver*' fusing the inner-directed self with machines for movement. (Sheller and Urry 2000, Urry 2004, 2007) This chapter deals mostly with the second, fourth and fifth aspect of the system of automobility. As already said these

components cannot be regarded in isolation but have to be understood through their internal and external relations. For example, it is impossible to think about the lock-in of the steel and petroleum car without considering the role of the oil and construction industry or the fascination with road movies and race cars in popular culture. (Eyerman and Löfgren 1995, Redshaw 2007, Urry 2007, Archer 2017) This is also emphasized by Paterson:

"To think purely in terms of the individualist account of 'the car' is to overlook most of the reasons why individual cars are highly prized commodities, objects of profound political significance and enormously ecologically problematic. It is the systemic nature of automobility which produces all of these effects." (Paterson 2007, p. 226f)

Paterson has a slightly different conceptualization of automobility than Urry. Whereas Paterson describes automobility also as a system, he has a more political-economic and power-focused understanding of it. According to him the continuous persistence of automobility is enabled not only through the facilitation of capitalist accumulation by its industry and the state but also through the governance and construction of *'automobile subjects.'* (Miller 2001a, Paterson 2007, Brand and Wissen 2017, chap. 6) Automobility and the car not only provide a central object around which a whole regime of accumulation is organized but further allow to actively produce the automobile subject around symbols, images, meanings and discourses legitimizing the regime of accumulation on a culture political level: *"Automobility has been so dominant and successful because of its ability to reproduce capitalist society – its political economy – and its ability to mobilize people as specific sorts of subject – its cultural politics."* (Paterson 2007, p. 30) Importantly, this subjectivity is not the simple determination of the above described political-economic system but the constantly produced and reproduced outcome of the relationship between the car and the driver through everyday automobile practices and their governance. The automobile subject thereby emerges from the interrelation between the car and the driver conceptualized as the hybrid of the car-driver. (Randell 2017) Meanings and discourses associated with the car and automobility are an integral part of this subjectivity and directly related to everyday practices of automobility. (Sheller 2004, Doughty and Murray 2016, Manderscheid 2018) The first empirical section will deal with two aspects related to this in particular: the cars position as status symbol and the normalization of automobility.

The car is one of the most important objects for providing status to its owner. (Urry 2007, Gorz 2009, Litman 2009) Owning a car today is synonymous with being adolescent and economically successful and the type of car serves as an important material signifier for personality and character traits of the car-driver. (Carrabine and Longhurst 2002, Sheller 2004, Uteng and Cresswell 2008, Collin-Lange 2014, Spinney *et al.* 2015, Balkmar and Mellström 2018, Manderscheid 2018) Albeit not part of the argument of this chapter this status-bearing character of the car has to be understood in relation to a wide set of emotions towards the car and its use, so that "*we not only feel the car but we feel through the car and with the car*." (Sheller 2004,

p. 228) The car is more than a lifeless object, driving a car also "*simply feels good*" (Kent 2015) and provides a space for socialities while cruising, on the way to work or during family activities. (Collin-Lange 2013, 2014) Thence, the car rather needs to be conceptualized as a personal and private space that is part of "*embodied sensibilities that are socially and culturally embedded in familial and sociable practices of car use.*" (Sheller 2004, p. 222)

Nevertheless, these emotions remain strongly attached to the normality of using the car in everyday life, which became established as the normal and hegemonic way of how movement is organized in modern capitalist societies over the last century. (Kent 2014, 2015, Wells and Xenias 2015, Gössling 2016, Manderscheid 2018) Ivan Illich describes automobility as a radical monopoly, because in order to get to work and participate in society the car is an absolute necessity due to the heavily increased distances between places of work and everyday life. (Illich 1974) Looking into countries like the United States or Australia this becomes particularly apparent, but also in many other countries commuting long distances is no exception, making the car a necessity and normality in order to work. (Bissell 2018) In Germany the average commuting distance is 16 kilometers and 2% of the working population are long-distance commuters commuting more than 50 kilometers and nearly half of all kilometers made by car are related to work trips and commuting. (Nobis and Kuhnimhof 2018) Thence, automotive emotions and daily car use for working and commuting in particular play a big role in how automobility became forcibly taken for granted and part of peoples' *"daily habits and routines, their assumptions about 'normality', […] and ultimately their sense of* who they are *in the world, […] driving is* what normal people do*."* (Paterson 2007, p. 223, emphasis in original) Thereby, everyday car usage became established as the normal and hegemonic way of how movement is organized in modern capitalist societies over the last century*.* (Illich 1974, Kent 2014, 2015, Wells and Xenias 2015, Gössling 2016, Bissell 2018, Manderscheid 2018)

Freedom and coercion

The second empirical section of this chapter deals with the dialectics of freedom and coercion present within automobility. As hinted at in the fourth aspect of automobility, automobility and its central object the car entail coercive forces to subordinate other forms of movement. First, the car permits to travel longer distances in much shorter time, however with the mass-adoption of the car long-distance travel also became a coerced necessity, as places of residence, work and leisure moved further apart. Illich already made this argument in the early 1970s, arguing that acceleration is forcing people into driving further and faster and "*to spend more time preparing for and recovering from their trips."* (Illich 1974, p. 17) Thence, the longer distances the car is supporting also make other modes of transport, especially walking and cycling, impractical or outright impossible, strongly enforcing the logic of capitalist mobilities of 'faster, further, more.' Second, the car enables people to organize their everyday life independently from public schedules of trains or buses and allows for an individual spatial and temporal flexibility, in comparison to public transport. Historically,

automobility allowed people to live by their own schedules, thereby overcoming the coercively perceived public schedules and re-established the meaning of movement as freedom. However, instead of making individuals passive passengers in trains and buses again, automobility makes individuals "*active participants [and] makers of their own travel plans*" (Paterson 2007, p. 134) through driving their own car according to their own schedule and thereby enable the intimate production and self-governance of the automobile subject's relation to freedom. Collin-Lange describes this flexibility and feeling of freedom vividly from the perspective of young people in Iceland, but also books like Jack Kerouac's *On the Road* (Kerouac 1957) or movies like *Easy Rider* (*Easy Rider* 1969) and *Paris, Texas* (*Paris, Texas* 1984) tap into this understanding of the car and movement as the ultimate enablers of freedom: (Miller 2001b, Urry 2007, Dowling and Simpson 2013, Collin-Lange 2014) "*It is reasonable to suggest that such images contribute to […] the legitimacy of automobility per se.*" (Paterson 2007, p. 162) This freedom today is understood as normal and the mastering of everyday life for many now is impossible without the flexibility of the car:

> "*Automobility is thus a system that coerces people into an intense flexibility. It forces people to juggle fragments of time so as to deal with the temporal and spatial constraints that it itself generates. Automobility is a Frankenstein-created monster, extending the individual into realms of freedom and flexibility whereby inhabiting the car can be positively viewed and energetically campaigned and fought for, but also constraining car 'users' to live their lives in spatially stretched and time-compressed ways.*"
> (Urry 2004, p. 28)

This dialectic of freedom and coercion is also manifested in Paterson's analyses of automobility. He describes automobility as being simultaneously means of liberation in terms of freedom of movement and flexibility and means of domination of the human body:

> "*Cars express human freedom but they simultaneously express it through the subordination of the human body not only to the technology of the car itself and the disciplines this imposes […], but also to the whole panoply of regulatory mechanisms constraining the automobilist's practices as a driver.*" (Paterson 2007, p. 142)

Thereby he enlarges the understanding of coercion from being only the coercion into the affordances of the car to the domination of the car-driver through a whole mode of automobile politics and '*governmobility*.' (Bærenholdt 2013) However, all these coercive aspects of automobility are obscured, because individuals play a substantial and active role in the production and reproduction of the system of automobility through the making of their own schedules, the perception of the car as status symbol, its normalization for everyday movement and its prominent role in discourses of freedom. Automobility is thus purely understood as means of liberation and people conceive practicing automobility "*precisely as the realization of their freedom*" (Paterson 2007, p. 142) and a right to comfort instead of a mere possibility. (Kent 2015) Taking these aspects together implies that changing the system of automobility isn't only a matter of inventing technology,

political or economic regulation, but also of reconstituting deeply entrenched everyday practices and their attached meanings, wherefore "*greening automobility entails a personal odyssey to remake one's identity and re-engage others according to different social logics.*" (Paterson 2007, p. 223, Soron 2009, Newman 2016, 2017)

The remaking of identity, social logics and relations and everyday practices are how this and the following chapters argue for the potential of change inherent in non-commercial carsharing. (Joseph 2003, Lilja *et al.* 2017, Lilja and Vinthagen 2018) Like every structural process, automobility is continuously reproduced through everyday practices and meanings, wherefore *"automobility is neither fixed nor omnipotent, [but] it always contains fissures that challenge its hegemony and suggest paths beyond it."* (Dowling *et al.* 2018, p. 12, see also Conley and McLaren 2009b, Doughty and Murray 2016) This chapter will discuss some of these fissures and challenges in relation to changing meanings of the car as status symbol and the influence of non-commercial carsharing on the dialectics between freedom and coercion. The outcome is a rather ambivalent subject position towards automobility in stark contrast to its hegemonic understanding as pure means of liberation outlined in this introduction. By producing alternative, potentially resistant, automobile subjects, non-commercial carsharing then also influences the local and broader reproduction of the system of automobility. (Lilja and Vinthagen 2018)

2   Status symbol or object of utility? The meandering meaning of the car

In this first section I want to go into the details of the meanings which the carsharers attach to the car. When I was talking with carsharers about their usage of the carsharing cars the topic of the meaning of the car came up frequently. There remain obvious traces of the car as status symbol, especially in the persistent perception of the car as basic necessity, as luxury object or as reference point for critique. Yet, most carsharers saw the car as an object of utility, a means to an end, and specifically contrasted their own meaning of the car with the meaning of the car as a status symbol. The meaning of the car in my cases thus is not easily pinned down, but rather ambivalent and meanders between status symbol and object of utility.

The car was and still is a primary means of conveying personal status. André Gorz describes the cars' origin as a luxury product which takes precious space from other modes of transport for the benefit of a few car-drivers. He declares it an outcome of bourgeois ideology, in which supposedly "*every individual can gain and enrich more prestige on the cost of all.*" (Gorz 2009, p. 53) While, Gorz regards the car as something that is forced on the masses for the sake of capital accumulation, owning a car is also in his understanding to a large part a means of personal status of any individual in capitalist society in order to gain and enrich prestige. Interestingly also now as nearly everybody has access to a car, the car kept its function as symbol of prestige, distinction and personal status. Even more, owning a car has rather become a coerced necessity in modern societies and not owning a car often carries the meaning of not being able to fully participate in society. The

car therefore is often interpreted not as a conventional status symbol but more as "*a comment of citizenship*," (Carrabine and Longhurst 2002, p. 193, Litman 2009, Altvater 2016) providing the status of a full member of society. (Miller 2001b, Spinney *et al.* 2015, Manderscheid 2018) Taking into account the active involvement of individuals in their subordination to automobility elaborated on above, the status and citizenship-bearing nature of the car needs to be understood as an active part of the production of automobility. The ongoing rise in the number of high-priced, upper-class Sport Utility Vehicles (SUV) indicates the contemporary relevancy of the car as status symbol, while even suggesting a sharpening of this meaning, where the type of car now comes into the focus much stronger. Brand and Wissen argue that the rise in SUV purchase is a sign of an increasing securitization against the dangers of the streets and is "*a medium with which the middle class is working on their 'latent fear of social decline'*." (2017, p. 129, author's translation) Again the car obtains the position as a status signifier of still being part of the middle class. Furthermore, the SUV conveys attributes such as economic success or gender roles, offering new articulations of automobile identities for example as economically successful, but still caring mothers. In other cases the SUV is meant to symbolize an easier access and closeness to nature, albeit they are mostly used in cities, (Sheller 2004, McLean 2009) or might even signify open disregard for concerns about the climate crisis (e.g. FridaysForHubraum[7]). The intent here is not to develop a critique of SUVs, but the argument I make is that the car still acts as a signifier of status and lifestyle and in many cases remains a basic necessity for the meaningful participation in society. (McLean 2009, Spinney *et al.* 2015, Altvater 2016)

2.1 The persistence of the car as status symbol

This sub-section will present data on the car as status symbol. Most carsharers are strongly aware of the persistent meaning of the car as status symbol and as normal part of being a citizen. Yet, only few of the carsharers are regarding a car or their car as status symbol, but rather perceive it as luxury good inclining them to share it with others. Additionally, the status-bearing nature of the car is commonly used as a reference point for critique on the car and gets contrasted with the own meaning of the car as object of utility. It becomes clear that the car as status symbol is in demise amongst non-commercial carsharers, however, ambivalently as strong traces of the status-bearing nature of the car remain.

The normality of the car

For many carsharers, especially in more rural areas the car's perception of the normal means of movement strongly remained: "*The smaller the place gets and the more rural the thinking becomes. […] The car still is some kind of possession and many people drive, because they think it is cool to drive their own car.*" (Family Schuster, Königsbrunn) This differentiation of the meaning of status symbol between cities and rural areas came up frequently. Christa and her husband described that in Anzing the car is still regarded as status

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[7] https://de.wikipedia.org/wiki/Fridays_for_Hubraum; FridaysForHubraum is an online movement that emerged as reaction to FirdaysForFuture in order to advocate for individual motorized transport with combustion engines.

symbol and that they expect some people to laugh when carsharing is going to start, because of the type of cars that are going to be used. By coincidence Judith has a costumer in Anzing and independently told me that the cars standing around there are not just means of movement, but rather they are still status symbols as they are always neatly cleaned SUVs. I am bringing this up to point out that the carsharers are well aware of the position of the car as status symbol and its endurance in society and that especially on the countryside owning a car is still considered normal.

Particularly Robert had to realize that having a personal car[8] is considered the normal thing in rural areas. Before his family joined the carsharing association in Markt Schwaben, they asked neighbors if they could go shopping with them to share the ride to the supermarket for the weekly shopping. However, he told me that after a few times it was clear that their neighbors didn't really want to share the shopping trip and didn't understand why Robert didn't have his own car: "*On the countryside, people don't have [a life without cars]. Well, in Markt Schwaben many have two cars, both parents have a car and many don't understand that you don't have your own.*" (Robert, Markt Schwaben) Robert's experience is a reminder of the kind of citizenship a car provides (Carrabine and Longhurst 2002, Spinney *et al.* 2015) and that without it one might have difficulties with being accepted as a normal member of society. It is out of the same impression that Frigga, who doesn't have her own car since many years, still says that "*of course it would be nicer if one would be standing in front of the door or in the garage,*" (Frigga, Markt Schwaben) and even asked me if I came to our interview in Markt Schwaben by car. Contrastingly, Karin actually never wanted to buy a car. Originating from Australia and having grown up in car dependency, she really enjoys not necessarily needing a car. However, when she was pregnant with her second child she couldn't manage her everyday life without a car anymore, because she had difficulties walking. At the time of our interview two years after getting a personal car they "*obviously*" own a car and albeit she doesn't like driving in Munich, she can't imagine life without it anymore: "*Especially with the children and I guess as you get older as well, you get also a sense of freedom.*" (Karin) Also for her, who never wanted a car, it nevertheless became this kind of necessity to fully be able to participate in society, especially regarding leisure activities with children.

In addition to these more implicit cases, there also are occasions when the traces of the car as a normalized status symbol show more explicitly. Helen, who says she doesn't care which kind of car she is driving and uses the different carsharing cars in Grafing and her neighbors' car regularly, felt weird when she was taking a carsharing car to pick up a friend from the airport and drive through Munich:

"*Somehow it was important to me, that it isn't some junky car, I have to say. I mostly prefer driving the Yaris, which is more or less in front of our door, but to pick up my friend from the airport I didn't want*

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[8] Throughout the chapter, personal car refers to the specific car owned by any of the interviewees, whereas private car refers to privately owned cars in a conceptual sense.

that. Red car, mh, really freaky, better to take the silver Polo. Somehow you are then still societally driven…." (Helen, Grafing)

What bothered her the most was the logo of the carsharing association on the side of each car, through which she is clearly recognizable as not using her own car. Whereas she doesn't mind that when she is driving around in Grafing or the surroundings, when driving into Munich she doesn't want to appear as if she can't afford her own car. She couldn't explain this to me or herself, but my interpretation is that this is a trace of the still remaining importance of the car as a signifier for status and full citizenship. Thence, the ideas of the car as symbol of being a normal and full citizen and the personal status attached to it are rather persistent and traces remain even amongst convinced carsharing members.

<ins>Status symbol or luxury good?</ins>

And indeed, there were two interviewees for whom the meaning of the car as status symbol actually remains well intact. During my interview with Maxim he told me in greater length about his 25 year old Mercedes that is parked in his garage and which he wants to become an antique car.[9] His main reason for joining the association was to spare this soon-to-be-antique-car, which he deeply appreciates: "*With my own car, as it is normal, I sometimes proudly walk around it and think: 'Woah, this just really looks nice'."* (Maxim, Grafing) He told me this in connection with a story about a small damage on the bumper of one of the carsharing cars that he overlooked at first. He said he would have recognized this kind of damage on his own car, but not with one of the carsharing cars because he "*just uses the car[s] to use [them]*." (Maxim, Grafing) For Maxim then the meaning of the car depends on the context in relation to ownership and personal history attached to it. Nevertheless, as it becomes clear from the first quote, he understands being proud of ones car as the normal thing to do, whereby the meaning of the car as status symbol strongly persists. (Gorz 2009)

Bob is also still owning a car, a sports car, to which he quite clearly attaches a personal status. He undertakes most of his movement by motorcycle and declares himself a despiser of cars. Nevertheless, he bought himself a sports car, because he didn't want to own a boring car anymore, but one that can be used for a joyride or to impress people. Albeit he says that it is totally stupid to have this car, because he can't transport a lot with it and that he rarely uses it, he still is proud of it and doesn't use it in winter, because he feels sorry for his sports car, sparing it from wear and tear. Also for Bob the carsharing car acts as replacement for instances when he would have used his own car, but doesn't want to or can't, making the status he attaches to the car dependent on its context. (Sheller 2004) For both, Bob and Maxim, the privately owned car carries a high personal status and importance, whereas the carsharing car is regarded as an object of

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[9] In Germany antique car cars can obtain a special license plate and tax status. These were introduced in 1997 to protect the car as cultural good. Cars that are older than 30 years and in good condition have reduced taxes and insurance fees and are also excluded from several environmental regulations. Generally antique cars are perceived as desirable and are a sign of high personal status for the owner. (HDI 2020)

utility for pure necessity and "*just a means of movement with which I could bring away cartons, that's it."* (Bob, Grafing)

The notion of status symbol of the car came up in many of my interviews, but mostly as general reference to the meaning of private car ownership for other people. Yet, the personal car was rarely described as a status symbol, but rather perceived as a luxury: "*It is a luxury to have a car at the snip of your finger and for that you pay of course.*" (Family Schuster, Königsbrunn) Suzanne bought her car because she wants to be able to make spontaneous trips to the mountains and visiting friends and thinks that organized carsharing is too expensive and public transport to slow for this. She said she would be able to life without a car, but it would mean that she would see her friends less, spend more time on public transport and has to plan her life much more. Therefore, she regards having her own car as a luxury good that allows her the luxury of spontaneity and comfort in planning her free time, as she doesn't use the car to get to work. The difference to a status symbol is her awareness of the car as luxury, which inclines her to sharing it with friends. Nancy agrees with this viewpoint. She was frequently judging people for owning a car in the city and then take themselves the luxury of having it standing around most of the time. That was one of the reasons for her to share her car, as she didn't want to be that kind of person who has a car standing around without it making sense. Overall, only few carsharers regard the car still as status symbol, while some, however, see it as a luxury good which inclines them to share the car with others.

The meaning of status symbol as reference point for critique

In many instances the idea of the car as status symbol, however, served as an explicit reference point for critique and for contrasting the car as status symbol with the own meaning attached to the car. Judith for example doesn't understand at all how the car can be part of personal status and thinks it is "*outrageous that it is part of self-esteem, which kind of car I have.*" (Judith) She told me a story about when she was driving with the Golf she is sharing with her friend through their neighborhood looking for a parking spot, when she got into a conflict with a SUV:

> "*I can't empathize how it feels to drive such a thing through Haidhausen and insist that I drive back with my Golf, because they don't have space. That says a lot. […] What do I need this in the city? Well, I also don't think it is ok that these cars are even built. […] They just don't…but that is a status symbol.*" (Judith)

For Henri actually both ends of the meaning-spectrum – status symbol and object of utility – serve as distinctive points of reference. On one side he sees the 'muesli-fraction'[10] who says that a car should just drive and be able to keep the windshield clean. On the other side he says that the cars for the carsharing association don't need to have a high social status, because he thinks that cars have too high a social status

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[10] 'Muesli-fraction' is a German derogatory term for ecologically-minded people, similar to the meaning of 'hippie' as a derogatory term in English.

anyways. His position, the kind of middle ground for him, is that a car shouldn't bother him, which means there should be a working air conditioning, which still allows for conversations to happen and have an appropriate level of comfort:

"The car for me is a means to an end. This means to an end should be made in a way that it doesn't rain inside, the temperature regulation, the air conditioning, should be working. So that are things I think are important, a few comfort features, but I don't have an emotional relationship to the car. That is completely foreign to me. I also think it isn't compatible with carsharing, when you see the car as part of your own identity." (Henri, Grafing)

Henri isn't the only one who thinks that regarding the car as status symbol isn't compatible with carsharing. Nancy told me that she could easily include a friend of hers in the private sharing arrangement as the car still isn't used very much. However, practically it is impossible to include the friend in the sharing arrangement because the friend sees the car as a symbol for economic success, independence and essentially as her own possession. Likewise, August told me that before he joined the camping van sharing arrangement he asked a friend of his if he wants to share his bus. However, he quickly realized that for his friend the bus is kind of "*his baby, which he wants to protect,*" (Camper) wherefore he quickly gave up on this idea. Interestingly Ellen added that in their camping van sharing they are now in a similar situation because their bus is old and has some oddities to it, wherefore they decided to not share it outside the group anymore. So, albeit the group is completely aware and actually critiques the protectionism of other people towards their cars, they are still protecting their own car. And although they all regard the car as an object of utility they thereby reproduce the meaning of the car as a precious possession that should have a clearly defined circle of users. (Clark *et al.* 2016, Buehler *et al.* 2017)

The ambivalent presence of the car as status symbol

What becomes explicit in the last paragraph and is implicit in many of the statements on the last pages is that many interviewees show some kind of ambivalent relationship towards the car as a status symbol. Certainly all interviewees are aware that the car still has this position in society, albeit it is changing in certain places and with certain people. (Kuhnimhof *et al.* 2012) The ambivalent relationship became especially clear in the case of Walter who describes his relationship as 'meandering'. He told me about the first car he got back in his youth, which was a clear status symbol and a piece of independence for him, as it enabled him to make trips to the coast whenever he wanted. Still, in his everyday life he continued to mostly use the bike. When he moved to Munich he took his car and even joyfully bought a camping van. Nevertheless, he got rid of his cars because he didn't use them enough and later on started privately sharing two cars. He describes the meaning of the car for him like this: "*But the meaning of the car was always a bit this free time, this being independent, this being able to do things, but [...] it was never this, I absolutely have to have a car, but it was always like, well it is nice when you have it, but at the end it works without."* (Walter) Because this feeling of

independence still remains today as he is using only StattAuto, he keeps thinking about getting a car again: *"I have to admit, I think about getting a car every once in a while. On the other side, I think this is completely stupid. So there is still this meandering course."* (Walter)

Briefly summing up, the car didn't lose its role as a status symbol through non-commercial carsharing. (Gorz 2009, Kent 2015, Brand and Wissen 2017) I provided multiple examples of the car remaining a normality and a signifier for full citizenship, especially in more rural areas. Most interviewees are explicitly aware of the hegemonic status of the private car, which influenced their relation to the car in different ways. In a few cases the meaning of status symbol becomes more nuanced and doesn't apply to every car, but only to the personal car. In other cases, car ownership and usage are understood as luxury good, still remaining a statement on status because the owner is actually privileged enough to own and use this luxury. The difference to the meaning of status symbol, at least in my cases, is that the people who regarded their car as luxury, were aware of their privilege which inclined them to share it with others, for which a parallel understanding as object of utility is necessary as I will show below. Lastly, the car as status symbol was also used as a reference point for critique, differentiation and actually deemed incompatible with practicing carsharing. By providing these examples I make clear, that the status of the car is still an important and persistent aspect for the production and reproduction of automobility. (Paterson 2007, Kent 2015) Sometimes strong traces of its status-bearing nature remain even amongst people who made a conscious decision to part with the hegemony of the private car. However, as I will show in the next section the meaning of the car as object of utility is strongly present amongst non-commercial carsharers, which further pushes towards a more ambivalent and alternative understanding of the meaning of the car.

2.2 A new meaning: The car as object of utility

In this sub-section I will explain how for many carsharers the car obtains a new meaning as object of utility. Although the meandering between status symbol and object of utility is an ongoing process for many carsharers, the association cars and the privately shared cars are used and managed in accordance with this new meaning of utility. This is supported by carsharing revealing the full cost of owning and using a car and making the planning of car use necessary. Usage of the car thus is always connected to a purpose, most often transporting goods or reaching destinations that aren't accessible by public transport. Thereby, the use-value of the car, movement, becomes emphasized over its exchange-value, status. However, both continue to be present, whereby the meaning of the car emerges as ambivalent.

The car as object of utility

While the still hegemonic and dominant role of the car as status symbol within society is traceable, influential and persistent amongst the carsharers, the car is mainly understood as an object of utility. I already talked about Walter and his meandering relationship with the car, not being able to decide if a car actually benefits him or not. On the other side of this meandering is his perception of the car as a pure object of

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utility: "*There was no dependency on a car, but it is an object, I would say, that we are not married to, but it is an object of utility, right? Everybody…that aspect I think is really important, this is not my car with which I connect many things, but I just use it.*" (Walter) Clearly, a private car makes him feel independent and is nice for leisure activities which refers to the meaning of the car as status symbol. Yet, he also regards the car as an object of utility, which he doesn't really need for his everyday life and doesn't carry any signifying value as status symbol. As others, Walter thinks the perception of the car as object of utility is important to make carsharing work. Suzanne is of a similar opinion and told me that she regards her car as a simple means of transport: "*When it has a scratch then it has a scratch. I mean for me it is an object of utility and not a status symbol, which is why the sharing makes sense.*" (Suzanne) She added that sharing the car would be much more difficult if the car would be someone's baby or perceived as a status symbol. Similarly, Mimi describes how the car shouldn't be a sanctum for anybody in the arrangement. There needs to be a certain relaxedness towards the car or in her words: "*Then there is a bump in it and then I see a bump and just think, mh…is it new?*" (Camper) A certain relaxedness about the state of the shared car also came to the fore during the interview with Beverly. When we talked about the cars she was sharing for many years and she said that in the early years many people were asking her if she wasn't afraid about damages that could occur. With a slightly bemused tone she explained to me why that never was a problem: "*They were all antique cars, at least a bit older cars, which already had their scratches, where sometimes the fly-rust was hanging off from. Where you say, well there is actually nothing than can break anymore, so that you say, well now it just has a scratch.*" (Beverly) The unspoken part of this statement is that with a new car this would probably be different, again revealing traces of the hegemonic meaning of the car as status symbol and emphasizing their co-presence.

This seeming carelessness for the car was also what surprised me during my participation in the car cleaning party. Instead of being annoyed by scratches and concerned about how the car looks, the participants were rather relaxed about it, which became much clearer to me while exploring this changed relationship to the car. Unsurprisingly, many members of the carsharing associations shared the perspective of the car as utility. As already mentioned, Maxim and Bob, who own a status-bearing car, regard the carsharing cars as something they just use and don't care about as much as they do for their own car and for Henri the car is a simple means to an end that requires a certain amount of comfort. Helen who also still owns a car together with her husband told me that she doesn't care about the type of car, as long as it has enough space to fit the essential things. As the reader might remember Helen was the one who didn't feel overly comfortable taking the carsharing car to the airport and into Munich, so also in her case the co-presence of the two meanings comes to the fore. For Erich the car is mostly an object of utility as he rarely takes it just for a ride, but mainly for trips with a clear purpose of getting from A to B. To underline his statement he actually told me how his car looks in detail:

"It is an object of utility, not a beauty…so we don't have any ideals for the car…the most important is that it works, not that it looks good. If you would see our car, you would know why I say that. For example the protection in the front is hanging lose. Somebody sometimes got it lose and then we put it back in and then again somebody got it lose and again and again and put it back and put it back and now it is just hanging." (Erich, Grafing)

Nevertheless, when I asked how he imagines movement once they got rid of their car and only use carsharing he said that "*at the beginning it will feel like not having feet anymore."* (Erich, Grafing)

Overall, there is a strong understanding of the car as object of utility amongst the non-commercial carsharers I interviewed. But how is this understanding of the car as object of utility influencing practices of carsharing and automobility? In the next three passages I will explore this in relation to managing the cars towards utility and a more conscious relationship to automobility, which together result in the car always being used with a purpose.

Managing for utility

I already wrote about Mimi and her apparent carelessness for bumps in the car, which she describes as the group taking things easy regarding the appearance of the car. This however doesn't mean that they don't care about the car. Quite the opposite. They stopped giving the car to people outside of their arrangement, because they are scared of others not being able to handle the car and its oddities. So it becomes clear, that this carelessness is only for the outside appearance of the car and not its actual functioning. The same was the case with Karl-Theodor. When agreeing on the rules of sharing the group agreed that "*we leave issues of appearance as they are, unless it changes something with the function [of the car]."* (Karl-Theodor) For sure exchange a broken indicator, but not worry or get into a fight over beauty marks such as small scratches or dents. In this way also most carsharing associations handle their cars. Simone told me that generally the car wardens are responsible for detecting damages to the cars and bring them to the workshop. However, in the case of small scratches normally nothing is done, because "*basically, [with] a scratch, the car still is able to drive*." (Simone, Freising)

Another aspect of managing for utility is that the boards of the associations pay a lot of attention to the cars being appropriate for the users' needs. Henri is part of deciding which new car the association is going to buy and he always votes for a compact van with a trailer coupling. This is because in a compact van you have enough space for transporting things and the trailer coupling allows to use a trailer, which is relatively common on the countryside where many people have gardens and the respective garden waste. And also members who have their own car sometimes require a trailer coupling and thus use those carsharing cars. Ulrike describes this management for utility like this:

"Maybe a different kind of car is bought or a car with, I don't know what, nine seats again, or anything. Well because they realize certain cars are booked very often, because they have a certain size or because of the trailer coupling or anything else. And there they really pay attention, that [spending resources] actually makes sense." (Ulrike, Grafing)

'Making sense' evidently is a very broad description, yet clearly the board tries to maximize the usefulness of the cars and facilitates this also by sending around surveys about which car should be bought next and also makes this a topic at the yearly member assemblies. Rosa told me, that they once bought a car that turned out to not have a trunk that was big enough, wherefore many of the members complained to the board. The members mostly use a car when they have to transport something and then a car that only fits one crate of beer is useless. Consequentially, this was also visible in the usage of the car as it was the car which was used the least. Since then the board only buys cars that are one size bigger and have the biggest possible trunk for their size: "*The color doesn't matter, everything doesn't matter, as long as the trunk is big…it is quite funny…well, not everything doesn't matter.*" (Rosa, Markt Schwaben) Robert exemplified this in relation to the commercial free-floating carsharing systems. When talking with him about the benefits of carsharing in Markt Schwaben, he told me that he enjoys the large variety of cars which serve the different purposes and needs for a car. In contrast *DriveNow* or *Car2Go* only provide *"fun-cars"* (Robert, Markt Schwaben) which are rather to get from A to B instead of going to Ikea or transporting things.

Thus the meaning of the car as object of utility is clearly ingrained in the way how the carsharing cars are collectively managed, by focusing on their functionality, usability and utility for the members' needs. Additionally, the very basic principles of how carsharing works support the stabilization of the new meaning through revealing the real costs of car driving and making the planning of car use necessary, which is discussed in the next passage.

Becoming more conscious about automobility: The real costs of car-driving and planning car use

Additionally, the way how non-commercial carsharing and most carsharing works practically, contributes to and further enables the realization of the car serving as an object of utility. Mariarosa describes the outcome of this as a more conscious relationship to mobility:

"Every member in carsharing is more conscious about mobility. Because you think, well, what am I doing? How do I get there? Can I get there by public transport? Do I have time pressure, so that I then have to take the car? That is a huge learning process that one participates in or an experience process." (Mariarosa, Grafing)

Mariarosa was actually able to observe this process through the usage of the cars. Albeit the association gained many members in the last years, they didn't have to get new cars by the same proportion. So each car is used by more members and each member uses the cars less. Unfortunately, it is not clear if this might

also be caused through members who join having a private car instead of no car as many long-term members. Rosa calls this effect an educational effect on the cost of driving a car. As the bills to a large extent are still prepared manually they are able to see that when a member joins they first use the car a lot, also for many small trips, as they were used to with their own car. After the first few bills however, their usage decreases:

> *"We always notice when somebody new joins: Hurray, drives a lot. Then the first bill arrives. The trip to the super market is five euro. Do I need that? Is it worth it? The next time they prefer going by bike, when they don't have a lot. […] This education is also an important effect."* (Rosa, Markt Schwaben)

This change was so apparent that the board even decided to not take too many people in at the same time to avoid temporary usage shortages. Rosa thinks, that this educational effect is caused through the users experiencing the real cost of driving a car. She does get complaints about carsharing being too expensive, but then she is always very quick in making the cost of using a carsharing car transparent. There is only one Euro cent per kilometer for the overhead and the booking system, wherefore the price for using a carsharing car represents the 'real' costs of driving a car[11]. These costs are often hidden when using a private car, because people don't take insurance, taxes, repairs and acquisition into account. (Andor *et al.* 2020) Through the regular bills each carsharing member is able to see for themselves what each trip costs and can decide more easily which trip is worth doing by car and which isn't. For most members however, the cost comparison between a personal car and carsharing was mostly a general reason for joining carsharing rather than a specific reason for not doing a certain trip.

The main aspect for a more conscious usage of the car from the perspective of the members is the requirement of planning their car use, due to the fact that if you want to use a car you have to book it in advance instead of just walking out the door. Most people told me about some kind of increased planning they have to undertake when making any trip since they are using carsharing: "*We always plan, no matter what we do, we briefly think about what makes the most sense.*" (Walter) In the associations this is more apparent as the car actually needs to be booked on a first come first serve basis. Frigga for example plans her car usage better and reduced the times she actually uses a car by only going shopping once a week or simply taking the bike more often. She said that this is because "*you have to think about it in advance. Well, when do you need the car…and a week in advance you should start planning.*" (Frigga, Markt Schwaben) Otherwise it could be that you don't get a car when you need one. This is an experience that Robert had to make quite often and which at the end actually was part of his family getting their own car again. He told me about multiple times when they had to take their kids somewhere or wanted to make a trip to the supermarket and weren't able to get a car on short notice. He is aware that one could also plan more in advance and book accordingly, but he said that organization just isn't his families' strength and that planning ahead is also more

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[11] These 'real' costs still exclude the environmental and social costs of driving a car, caused by environmental damages and social exclusion. (Conley and McLaren 2009b)

difficult with kids. While for Robert this was a reason to get a personal car, Hannah and Ulrike both decided to plan their usage and also book the car in case they are not completely sure if they will actually use it or not: *"Yes, you have to look in a timely manner. I now do it, and I can reconcile that with my consciousness, that I rather book more and earlier and then cancel again. Before I tended to wait too long and then it was too late."* (Hannah, Grafing) Having to organize car use is also an issue within private sharing arrangements, albeit the problems of overlapping were mostly dealt with when setting up the arrangement, wherefore there either are clear rules on who can use the car when, a replacement such as StattAuto or the possibility for negotiating the need for a car between the sharers. However, this need for organizing car use can be met with a lack of understanding from people external to the arrangement as is the case for Judith: *"Well, I just need to plan differently and that irritates those who are used to always have the car. Those are irritated at the beginning."* (Judith)

To sum up, the reconstitution of the car as object of utility is supported by a more conscious relationship to automobility in general and the use of the car in particular. This consciousness consists of two aspects. First the actual cost of using a car becomes transparent to the carsharers, wherefore the car loses its supposed cheapness in relation to other modes of transport. (Andor *et al.* 2020) In the everyday practice of carsharing however, the second aspect of having to plan car usage is more important than the cost transparency. Through having to book a car prior to usage the carsharers are forced to think about which mode of transport makes sense. For many carsharers this develops into a routine significantly changing their overall mobility habits and behavior, echoing Paterson's description of "*personal odyssey*" (Paterson 2007, p. 223): *"I think, that I overcome myself much less and say…for that the car is worth for me, also that I travel a certain distance. […] I don't just drive somewhere, but I am much more conscious, if I…which vehicle I take."* (Clara, Vaterstetten) These two basic principles of carsharing result in most carsharers always using the car with a purpose.

Using the car with a purpose

Managing for utility on the organizational level of the association, making the cost of car driving transparent and making the planning of car use necessary result in and develop from the actual usage of the cars. Most members mainly use the car when they have to transport something. Maxim for example only takes either his personal or a carsharing car when he has to transport something that he can't take by bike or public transport: "It *is a bit a functional thing. From a certain amount of things that I have to transport or pull on a trailer I would then drive with the car."* (Maxim, Grafing) Also Frigga uses the car mostly for transporting things either locally to her garden or to her house in Saxony-Anhalt which she currently needs to renovate. While many members share this purpose of transport, most members also have other occasions when they use the carsharing car.

A common occasion when the carsharing car was used, was when alternative modes of transport weren't feasible, especially when the distance was too far for cycling and there is no worthwhile public transport connection. For example, David's main purposes for using carsharing were because of these reasons. First he uses it mostly to get to his job, which is not connected to public transport. Albeit he could cycle, it would take him double the time and he can't shower at work, which makes it uncomfortable for him to cycle. His second regular trip is for donating blood. Getting to the clinic takes over an hour with public transport but just 20 minutes by car. Ulrike told me about similar occasions, e.g. when she wants to visit her nephews or attend a health course, where she can't get with public transport and therefore takes the carsharing car. Some members also take the carsharing car for vacations or day trips, either when they don't have a private car, need a bigger car or a trailer coupling. These trips are mostly connected with the purpose of leisure. Furthermore, some interviewees said that when they use a car they try to combine as many things as possible so that they don't have to use a car that often: *"I can't imagine a car ride, where we only do one thing. […] It should also have a side effect, an organizationally sensible, in order to, I would say, justify [the car] to a certain extent."* (Clara, Vaterstetten)

For most carsharers thus using the car, be it the private or the carsharing car, was always connected to a purpose with a specific reason. Erich expressed it like this: *"It is rare that we just drive, like a 'Kaffeefahrt'*[12] *or a cruise, that we only do very little…I can't even remember, when that was the last time. Going to the sauna or something, purposeful, yes, but not just…"* (Erich, Grafing) Hannah made explicit what is implicit in this usage of the car: "*I realize in comparison with other people how self-evident it is to take a train. I don't even think about the car. So the car is reserved for situations when it doesn't work differently. The priority is just different."* (Hannah, Grafing) Whereas, taking her statement literally doesn't match the real use of the carsharing cars in many cases, it symbolizes the attitude most of the carsharers have towards the car. Furthermore, this is an important difference in the self-differentiation between people who see the car as status symbol and those who regard it as an object of utility. The car isn't valued as such, but is valued for the specific purpose that it enables be it transport, accessibility or leisure activities. So the attention is focused on the use-value of the car which is movement and transport from A to B, whereas people who regard the car as status symbol rather focus their attention on the appearance of the car and how it functions as exchange-value for status and prestige.

Thence, the car as object of utility allows for a different priority of the car in everyday mobility. For all carsharers the usage of the car had to be necessary in the sense of requiring the transport of goods or reaching a destination that otherwise can't be reached. The car thereby becomes the last alternative for

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[12] A German term for a car trip for the sole purpose of drinking a coffee somewhere.

movement instead of the primary means of movement, clearly challenging the subordinating position of automobility and the hegemonic position of the car in everyday mobility. (Urry 2004, 2007)

The ambivalent meanings of the car

To conclude this section, I again want to stress that both meanings of the car as status symbol and object of utility are co-present for non-commercial carsharers. The persistence of the car as status symbol highlights the need to understand the role and meaning of the individual car in relation to the societal meanings of automobility. It is not only the individual significance a person gives to a car, but also the values that are collectively attached to the car which relationally create the attached meanings: "*The individual psychological investment in the car can be said to arise out of the sensibility of an entire car culture.*" (Sheller 2004, p. 225) Any attempt at changing the hegemonic position of automobility and the individual meaning a person attaches to a car therefore has to pay attention to the co-presence of meanings of the car within society and the inherent entanglement with the everyday powers of hegemony. (Johansson and Vinthagen 2016) This means that there can't be a replacement of one meaning by the other, but only a reconstitution with different emphases and hegemonic meanings. Therefore, it is impossible to reconstitute automobility without being part of its production and reproduction. (Dowling and Simpson 2013, Kent and Dowling 2013)

For this reason and by acknowledging the hybrid of the car-driver according to Paterson *"the appropriate response to automobility is neither simple celebration nor condemnation, but* ambivalence." (Paterson 2007, p. 163, emphasis in original) And in quite some of the cases it can't be clearly said which meaning is most dominant, but they are rather in a constant ambivalent and 'meandering' relationship with each other, mixing and creating hybrids such as the "*leisure vehicle*" (Karl-Theodor): "*And the car I simply just needed for my leisure time. [...] I use it predominantly for day trips for hiking or skiing.*" (Hannah, Grafing) A majority of the carsharers manage their everyday life mostly carless, but didn't want to be constrained in their leisure time. The car as 'leisure vehicle' thereby combines both meanings of status and utility by providing the independence of the car only for specific purposes. Thence, non-commercial carsharing is not simply working against the hegemony of the private car, but actually works with the dominant logics of automobility in order to overcome them through altering the reproduction of hegemonic practices. (Dowling *et al.* 2018)

3   Meanings of automobility: The dialectics of freedom and coercion

This section will discuss the expression of the dialectics of freedom and coercion within automobility amongst non-commercial carsharers. In the first sub-section, I will present how freedom is still relevant for non-commercial carsharers in relation to automobility in specific and mobility in general. However, through perceiving mobility as necessity the coercing aspects of automobility gain significant traction and recognition amongst non-commercial carsharers as I will show in the second sub-section.

3.1 (Auto)mobility and freedom

Freedom, independence, flexibility and comfort

The connection between mobility and freedom is widely present and recognized amongst the non-commercial carsharers I interviewed. Some said this actually to the word: "*Mobility is like freedom.*" (Karin) She explicitly connects this with the freedom of choice she has regarding the different forms of mobility available to her, ranging from cycling to public transport to driving her personal car to various forms of sharing. However, when this meaning of freedom was mentioned prominently it was mainly in relation to the car. When Mariarosa grew up her driver's license meant freedom, as she was finally able to move independently. Growing up in the countryside, she was dependent on sparse public transport or her parents and older friends driving her to the places she wanted to go as the distances were too far to cycle. The driving license was therefore the most important thing when turning 18. Stella, didn't have a driving license until sharing Karl-Theodor and it is only then that she understood why people actually perceive the car as giving freedom:

> "*I made my driver's license now finally with 27 or 28. And then I actually also had a feeling of freedom, what other people probably have already when they are 18. But this feeling, that you can now decide for yourself to drive everywhere with such a vehicle, […] that definitely is a feeling of freedom.*" (Karl-Theodor)

David expressed this freedom as independence he gained through his driver's license. Before he was able to drive a car mobility was cumbersome for him as he had to drive long distances by bike or was dependent on his parents. Now with his license he is able to use a car independently from his parents through carsharing, making himself independent on when to move where: "*Well, a car as such [is always independence]. And there is not much left to carsharing, there is not a big difference. So it definitely is a piece of independence.*" (David, Königsbrunn)

There were also cases when the connection between freedom and automobility was implicit, e.g. by referring to flexibility: "*Flexibility, uncomplicated, that's how it should be, yes. […] For me it is like, ok, now I want to go somewhere and then it also has to happen somehow in the next month.*" (Beverly) Beverly and many interviewees particularly emphasized flexibility as something a car provides. Mariarosa and her husband actually got a car again a few years ago, after living with only carsharing for many years, because when they are retiring soon they want to have more flexibility for trips to the mountains and the region. Selma even thinks that because the car is so flexible it will not disappear as a mode of transport. In this context she also sees carsharing critically, as having to plan in advance is the exact opposite of flexibility and freedom and also doesn't fit the reality especially many parents are living in. Thence, the perception of freedom isn't necessarily only connected to driving itself, but also to flexibly decide on when to drive as "*makers of their own travel plans.*" (Paterson 2007, p. 134)

Figure 4.1: Streetscape of Königsbrunn, where mobility is understandably cumbersome without a car. Source: Author.

Antonio sees this as an explicit fear people have when they think about carsharing: "*When you suddenly have wishes, because you want to help someone and then it should be possible to get a car. […] That is so to say the fear of the private car owner, when they give away their car. […] You want that it somehow works your life.*" (Antonio, Markt Schwaben) What he means with this is that people want to keep their freedom of being able to do what they want and when they want. Usually, this is perceived as only being possible with a private car, an understanding of which most interviewees are well aware and sometimes reproduce themselves as shown above. This is an aspect that Henri made particularly strong. He only became a full member of carsharing because he was able to have the car in front of his door for being a car warden. He told me that this accessibility is very important for him, "*because [he doesn't] want to hike for one kilometer to get the car,*" (Henri, Grafing) and is even part of his quality of life. Having a car available allows for the flexibility of planning according to one's own schedule and being independent from public transport or weather, while providing a high level of air-conditioned and non-strenuous comfort for moving. This resonates with the comfortability of the car that is often foregrounded and actually became naturalized as "*long held cultural beliefs that one has the right to be as comfortable as one can afford to be.*" (Kent 2015) Simone implicitly refers to this when she says that some people just need the freedom of having a car in front of their door and Raya is explicitly aware of it as she told me that where she lived before it wasn't necessary to have a car but it was just more comfortable

To briefly sum up, the association of freedom with (auto)mobility is still persistent amongst non-commercial carsharers, especially in relation to independence, flexibility and comfort. While this didn't come

to me as a surprise, during my fieldwork I was more and more wondering how the persistence of this association with freedom goes together with an understanding of the car as a mere object of utility.

The leisure vehicle reconciling freedom and utility

In the previous section I already briefly argued that the car as leisure vehicle is a hybrid form of status symbol and object of utility. I want to extend this argument and argue that the car understood as leisure vehicle allows for regarding the car as object of utility while the connection between (auto)mobility and freedom remains intact. This connection and co-presence of freedom and utility in the leisure vehicle became clearest to me during the interview with Walter when he explained his meandering and ambivalent relationship to the car. He regards the car as a pure object of utility that he isn't dependent on and when starting carsharing didn't think it is 'cool' to have a car. As he never had to commute by car he only uses it for leisure purposes and to make up for the small size of their flat. So for him the car is something that enables freedom in leisure activities but in anything else he rather perceives it as a burden. Likewise, Suzanne told me that her car is mostly a leisure vehicle that she doesn't use in her everyday life, e.g. for shopping or commuting. She uses it for keeping contact with friends who life further away and leisure activities such as climbing or skiing in the mountains. She explicitly wanted a car that she could use with friends and always tries to fill it up when using it for leisure activities. Her current car is actually a test on how much she needs it, but she doesn't want to become dependent on it:

"In any case I won't become dependent on a car. […] At the moment I wouldn't want to give it away, because I already got used to it being in front of the door and that you can just quickly go to the mountains or visit someone somewhere, but…no, if it's gone, it's gone. That would also be fine." (Suzanne)

As already said, she self-defines her car as luxury object and object of utility and I can add now that she utilizes it for the indisputable luxury of more freedom in her leisure activities. And albeit she currently doesn't want to live without the car, she seems to have a relaxed attitude to its potential absence. Therefore, instead of the car being an indispensable status symbol for free movement whenever to wherever, the car rather becomes a dispensable object of utility that enables more flexibility for leisure activities. Also Christa and her husband, who still have two cars at home and are highly dependent on the car in their everyday life, say that they can't imagine living without a car. However, not because they wouldn't know how to handle their everyday life, but rather because of taking the car for vacations and leisure activities that are only possible with the car, e.g. kayaking or climbing.

For all of the above and many other carsharers, the car never became predominantly associated with freedom because it isn't a necessity for their everyday lifes, but is only used for special occasions. Yet, the societally valued connection of (auto)mobility and freedom remains intact through the car being perceived and used as a leisure vehicle. Nonetheless the hegemonic understanding that the car is always, necessarily

and predominantly a signifier for freedom and means of liberation is challenged, enabling a more ambivalent understanding of the significance and meaning of the car.

Limits to free mobility

This contestation is also visible in some carsharers describing situations and conditions under which a reduction or limitation of freedom is desirable. Also here Walter provided a good example. While we were talking about other forms of sharing that he has been using he described to me why he doesn't think *DriveNow* is very efficient in replacing the car:

"I don't want to think every evening how I am getting from A to B. I somehow want to get into this daily grind. […] This isn't a dream come true, but that is reality. And that I have to be able to represent in a carsharing model. […] I do the same rituals every day, drive there, drive back, leave it and go out again. I never have to think about if it works, it just works." (Walter)

Quite obviously getting into a daily grind and building rituals is far away from having full freedom, but nevertheless Walter sees it as reality and the essential aspect of using a car in everyday life.

Other carsharers described the limitation of freedom more explicitly. Hannah for example is reducing her mobility through not flying a lot and says that she is *"willing to abstain from mobility, from the technologically possible."* (Hannah, Grafing) Just because it is technologically possible doesn't mean for her that it is sensible or reasonable to be mobile. Ulrike also abstains from activities sometimes because she can't get there by public transport and doesn't want to use the car, e.g. getting ice-cream in the next village. Likewise, Clara describes her private carlessness as a self-chosen constraint on her mobility.

To conclude this sub-section, I want to emphasize that as with the meaning of the car as status symbol the association of mobility and automobility with freedom isn't disappearing through non-commercial carsharing. Rather, through the car becoming a leisure vehicle and decoupled from everyday life, freedom and utility are co-present. Yet, the just described implicit and explicit references to self-chosen limits on freedom of movement by car actually hint at a tension and negotiation with an understanding of (auto)mobility besides freedom as necessity and means of domination. (Paterson 2007)

3.2 (Auto)mobility and coercion

Mobility as necessity

Amongst the non-commercial carsharers I spoke with the most prominent meaning of (auto)mobility besides freedom was seeing (auto)mobility as necessity. Murray never drives around for fun. He said, that maybe at his 18th birthday when he got his license he went for a cruise with the car, but for him mobility is a means to an end and a necessary evil. He doesn't have wanderlust, lives close to work and the local organic store and as vice-principal of a school he only has four weeks of summer holidays and during those he participates in the local holiday program with his family. In case he has to move far with a car, e.g. to visit his

father-in-law he tries to deal with it as normal life-time through talking or listening to the radio and never sees movement for its own sake, which would push him into being annoyed of traffic and feeling to waste his time. Murray actually understands every kind of mobility as something forced upon him. He actually prefers to stay at one place and also argued that historically people only had to move to sell their goods and not for movement as such. This argument is relatively easy to refute when thinking of pilgrimage or the long history of human exploration and it is also on the extreme end of the meanings attached to mobility amongst the carsharers. Nevertheless, it illustrates that mobility can also be associated with force and as means of domination, challenging the hegemonic understanding of mobility as means of liberation and freedom. Contrastingly, for Hannah mobility should have a deeper meaning and a significance beyond movement: *"For me it always comes together with a kind of gain in knowledge or consciousness. And then I think, that it is good, when you also use something…to invest or consume something to get somewhere."* (Hannah, Grafing) Thus for her the necessity and purpose of mobility is that it should enrich one's knowledge about the world.

Seeing mobility as necessity also leads to an abstention from speed for some carsharers. Ivan doesn't regard mobility as a purpose of its own but as necessary evil and reaction to a lack of something: *"When I have to get from A to B, then I have to do that, because I have a lack of something in A. So I have to get to B to get rid of that lack."* (Ivan) In his youth he was still fascinated by the "*miracle of movement and acceleration,*" (Ivan) which allowed him to experience speed and drive wherever and whenever he wanted. However, with the change of his meaning of mobility, he now tries to reduce his movement to a small area where he can rely on his own body for movement. A similar abstention from speed was described by Ulrike, Helen and Robert who all told me that they enjoy walking and using their own body for movement. Robert enjoys that he had to walk to pick up the carsharing cars instead of getting into the car directly in front of the door. Helen enjoys walking with her son as she is then able to spend time with him, e.g. on the way to go shopping. Ulrike said that being able to walk is the most valuable form of movement for her: *"Mobility on foot is the most valuable for me. I want to get self-determined from A to B without a wheelchair or something else on my own feet."* (Ulrike, Grafing) She therefore chooses the place she lives according to the mobility options available, as it is important for her to be able to reach public transport on foot, allowing her to not depend on the car.

Karl brings these aspects together when he describes mobility as a basic need of life, on which social relations depend. Instead of demands for more freedom to move through increased transport infrastructure, for him this leads to the questions if every mobility is necessary or reasonable and how mobility can be organized to reduce traffic, "*the ugly twin sister of mobility. Because everybody wants mobility, but nobody wants traffic."* (Karl, Vaterstetten) This means that he understands mobility not as 'God-given', but as something that is shaped. Mobility is produced and sometimes forced through decisions on where people live, which hobbies they have, where they make their vacations or how a city is planned. But the resulting

traffic is rarely taken into account when these decisions are made, creating unnecessarily large mobility needs: *"And then I suddenly have to drive somewhere, that is a burden for me, that is not fulfillment, that is forced mobility. I have to have it, but I don't want it."* (Karl, Vaterstetten)

Everybody I referred to above thinks, that it is important to be able to move in order to get to places of interest, be it the father-in-law or an unknown culture to be experienced. Selma thinks that this desire to move is intrinsic to humans. However, she emphasizes the need to understand this as part of a cycle between moving and resting. It isn't possible to be constantly on the move, but one also needs times of stillness. The argument I thus make is that besides associating mobility with freedom there is a strong association of mobility with necessity and purpose either for getting to places to reduce a scarcity or to enrich ones knowledge about the world. The association with freedom is challenged through a conscious abstention from speed by valuing walking and taking mobility into account when deciding on how and where to life. Thence, many non-commercial carsharers in my study have a differentiated understanding of mobility as a socially produced relationship between movement and stillness, resembling more the relationship between mobilities, immobilities and moorings, (Hannam *et al.* 2006) instead of unrestrained movement and freedom. These alternative meanings of mobility open the door for recognizing the coercive aspects of automobility and the car.

The coercion of the car

Once again Walter described the coercive nature of the car and automobility quite well: "*When they have their own car, then they have to use it, because otherwise it doesn't pay off. The simple fact that they have it, leads to them preferably doing everything with it, because otherwise they pay double.*" (Walter) Paying double means that when he picks up his two kids by public transport somewhere within Munich, he easily pays 10-12€. With a privately owned car the perceived costs are marginal as the investment in the car is done anyways already. So the large investment that is made into the car creates a necessity to use the car for the investment to be worth it. And every additional form of transport, be it public transport or a well maintained bike are extra costs for mobility, that from a pure monetary perspective are not necessary, resulting in automobility "*subordinat[ing] the other mobility-systems of walking, cycling, rail travel and so on."* (Urry 2007, p. 117, Conley and McLaren 2009b, Soron 2009) This was also articulated by Louis and Stella. Louis said that he actually isn't overly sad when the car is with Nancy because he is using it more when it is standing in front of his door. The convenient access to the car already is enough to coerce Louis into using the car more than he actually wants, wherefore he is satisfied with having a higher hurdle for laziness and knowing that he can get one when he really needs it. Stella told me nearly the same problem she sees with a personal car: *"[We] don't want to have car in front of the door all the time. Because the temptation is too big for using it and we actually don't want to use if very often."* (Karl-Theodor)

Other carsharers described the coercion more implicit and from the perspective of their personal history. Raya for example told me that a few decades ago, when they were still living in the suburbs they had two cars and that it was "*somehow a matter of fact: part of mobility is a private car.*" (Raya) And still today this is understood as the hegemonic discourse in large parts of society: "*It is the normal model in our neighborhood. One driver's license at least one car, if not more.*" (Ivan) This normality and self-evidence of the private car is also some kind of coercion, linking back to the already discussed normalization and "*comment on citizenship,*" (Carrabine and Longhurst 2002) which ultimately leads to a coercion into the car as a mode of transport.

Christa and her husband, who have been living in more rural areas for a long time described this quite vividly. While they were living in the Taunus region, a rural region north of Frankfurt, it was impossible for them to move without a private car, simply because there was no alternative. Also in Anzing the alternatives are sparse with no regular bus service to many neighboring villages which have access to the suburban trains. Often the school buses would be the only viable option to get to work, but these are overcrowded with pupils. In the course of the interview I talked with them about the reactions of the people in Anzing to their initiative for founding a carsharing association and they told me that many have the attitude of: "*We have our cars we don't need [carsharing].*" (Family Schmidt, Anzing) People in Anzing arranged themselves with the situation that they need to use the car to get around and that it became so normal that alternatives are hard to take into account or to imagine. When I went to Anzing for the interview I also had difficulties planning my trip there, because there was no bus going back and forth which wouldn't have let me wait for more than 30 minutes in a brisk autumn night. Therefore I took my bike on the suburban train and cycled the remaining five kilometers. Doing this once wasn't problematic, but I got at least a glimpse of how cumbersome and time-consuming it would be to live in Anzing without a car. Therefore, I was intrigued if they took mobility into account when moving there. They told me that they initially wanted to move closer to Munich, but that the place in Anzing was what they could get and "*you just surrender somehow.*" (Family Schmidt, Anzing) Even a long time after the interview I consider this as a telling statement about automobility as it signifies acceptance of a situation that you can't really change and carries a strong notion of powerlessness and coercion. Automobility remains the only feasible option and again demonstrates its strong coercive nature, which however at least is becoming visible.

This is the main reason why Helen isn't fond of her husband's idea of moving from Grafing into a smaller village further on the countryside. She gives a high importance to being able to move without a car:

"Because I know, that it wouldn't be me having the car at the end, but the car would be traveling with my husband. I don't mean that in a bad way, it also isn't a drama, but at the end I would be the one who sits at home and has to look for the bus connections so that I can somehow move. And that is not my goal." (Helen, Grafing)

Because she doesn't want to buy a second car, she would depend on public transport if she wants to move beyond the village. Apart from showing an unwillingness to become dependent on the car this quote also shows how automobility is part of coercing people into traditional gender roles of the automobile husband and the non-automobile housewife. (Uteng and Cresswell 2008, Brand and Wissen 2017, chap. 6)

Also with interviewees with kids the coercive aspects of the car often became apparent. Selma told me in great detail that with her three kids it is impossible to travel longer distances without a private car: "*Let alone the trip from Munich to Vienna with the kids, the equipment, uuaahh, well that doesn't work. I can't do it, it is impossible.*" (Selma) With three kids comes a lot of luggage not only for the destination but also for the trip itself, which from her perspective makes the car currently a necessity. The only potential alternative that she sees is to abstain from travelling with her kids to the next lake or to visit the grandparents, which she doesn't want to do. There are many more stories like this, including having to hitchhike from work to get home when the kids finish school and having problems with the child car seats in carsharing cars. Surely there always is some way to live without a private car, but what should have become clear is that it isn't particularly easy, especially with kids. The lack of viable alternatives makes the car a perceived necessity for families coercing them into automobility and car-dependency. (Buys *et al.* 2012, Mattioli *et al.* 2016) While this isn't different for anybody else, the carsharers I talked with were aware of this coercion, challenging freedom as the hegemonic meaning of automobility.

Also the more direct coercive aspects of automobility in relation to flexible schedules and attention to the road were described to me. For example Robert told me that his life as car-dependent husband was really stressful. As his wife knew exactly how long it should take him to get home by car, he was always stressing himself being on time, coercing him into the flexible schedule and the speed the car provides: "*I always had to commute on a tight schedule. I was always stressed because with the car it is…she called: 'Now you have to come home.' Then she knew exactly I am home in 15 minutes, because the commute is 15 minutes. So quickly to the car!*" (Robert, Markt Schwaben) This changed since they use carsharing and he takes public transport to work. In case he has to go home earlier, he now doesn't need to leave instantaneously by car but can just take the next suburban train, significantly reducing his stress. But not commuting by car anymore didn't only relief Robert from the flexible coercion of the car but also relieved him from the coercion into attention while moving: "*On the way there I could read.*" (Robert, Markt Schwaben) Driving a car requires a lot of attention of the car-driver, wherefore automobility also coerces people into spending their time on driving a car: "*The driver's body is itself fragmented and disciplined to the machine, with eyes, ears, hands and feet, all trained to respond instantaneously and consistently, while desires even to stretch, to change position, to doze or to look around are being suppressed.*" (Urry 2004, p. 31) While this is an aspect that is often neglected by car-drivers or tried to compensate through conversations with fellow passengers, radios or phone calls, (Collin-Lange 2013, Kent 2015) many of the carsharers saw the attention that is required by

driving as undesirable or even coercive. Mariarosa prefers to take public transport because she can *"sit and look out of the window and doesn't have to concentrate on traffic. Well, I don't like driving a car."* (Mariarosa, Grafing) When driving a car she has to concentrate on traffic and is occupied or worst case in a traffic jam, which for her is perceived as useless time that the car forces upon her.

Summing up, through relating mobility to necessity rather than to freedom the coercive aspects of automobility, such as car dependence in rural areas or with kids, automobile gender roles, being tied into flexible schedules and forced attention, become visible for the carsharers. Hence, non-commercial carsharing breaks the coercion of the private car, especially when there is no personal car present in the household. Walter described this as the provision of full freedom of choice in terms of transportation. Instead of being forced to use the private car due to the costs sunk into its investment, he can choose the mode of transport that makes the most sense for every trip: "*What is the most reasonable mode of transport? And for that you have the free choice. […] [Carsharing] gives you the flexibility of not having to drive with the car."* (Walter)

The different expression of the dialectics of freedom and coercion

Paterson and others argue that automobility is predominantly understood as means of liberation and fulfiller of human freedom, while the coercing and dominating aspects of automobility are obscured and underrecognized. (Illich 1974, Böhm *et al.* 2006, Paterson 2007, Urry 2007) However, in this section I presented data showing that amongst non-commercial carsharers mobility is also strongly associated with necessity. The association of freedom and mobility, though, is still present in terms of independence and flexibility, as the car seen as leisure vehicle enables the co-presence of symbolizing freedom while being an object of utility. Yet, many carsharers I interviewed also talked about occasions and situations when a limitation to freedom is desirable, suggesting that this co-presence is ambivalent and destabilized by the strong association of mobility as necessity and necessary evil to remedy deficiencies. For most carsharers, mobility always has a purpose that is mostly linked to the destination and therefore a place, foregrounding the relationship between mobility, immobility and moorings. (Hannam *et al.* 2006) Overall, mobility is perceived as a basic need of life which is produced by personal but also political and societal decisions and can therefore also be forced. From this meaning of mobility as necessity the coercive aspects of automobility can also be recognized more clearly. Due to the large investment into a car, its owner is coerced into a near to exclusive usage. While this historically was true for many people, today especially in rural areas this coercion is still painfully present in everyday life. Furthermore, automobility supports hegemonic gender roles and coerces families into car-dependency due to a lack of family-friendly alternatives for movement. (Uteng and Cresswell 2008) Lastly, on a more personal level the car coerces people into a flexible schedule and consumes their attention and time while driving. (Urry 2004) While these coercive aspects are usually obscured through the dominant association of automobility with freedom, flexibility and independence, they come to the fore through different meanings of (auto)mobility in general and the car in specific.

Both aspects of the dialectics of automobility – freedom and coercion – are present and widely recognized by non-commercial carsharers. Whilst automobility predominantly presented itself as pure means of liberation, the relationship between liberation and domination is more ambivalent in non-commercial carsharing. The coercive and dominating aspects of automobility have significant traction amongst non-commercial carsharers, also through a more ambivalent meaning of the car as leisure vehicle and a perception of mobility as necessity. Non-commercial carsharing is thence challenging the hegemony of automobility also through a different expression of the dialectics of freedom and coercion.

4 Shifting meanings of automobility and the car: Reconfiguring the automobile subject

Through practicing non-commercial carsharing automobility and the car become understood more ambivalently than as pure means of liberation and status symbol. In this discussion I first want to explore two important causes behind these shifts, which are grounded in two basic characteristics of carsharing: shared ownership and flexibility. Second, I will argue that this reconstitution of the meanings of automobility and the car are producing alternative automobile identities and subjectivities by reconfiguring the automobile subject.

The release from the burden of ownership

Albeit there follows a whole chapter on changing ownership relations, I want to go into the aspect of the release from the burden of ownership as it directly relates to the coercion of the private car. Understanding private car ownership as burden is a decisive break with understanding the car as personal status symbol that has to be cleaned, repaired, maintained and cared for regularly. Walter attributes carsharing with "*just a nice feeling, you always get a car, that is ready, that is maintained and at the end you give it back and have nothing to do with it anymore.*" (Walter) Also Simone emphasizes this aspect of carsharing as especially second cars are often a large financial and temporal burden as they are standing around even more than a first car. But also when replacing the first car many things in relation to caring for the car are taken from the carsharing members, e.g. going to the workshop, paying for insurance and dealing with parking: "*I always say that one lives more carefree.*" (Simone, Freising)

For James this actually was his main reason for joining carsharing. He used to own a car for many years, which sometimes was standing around for multiple weeks or months and then had an empty battery, rusted breaks or some other damages that needed repairs: "*The car for me was just a burden, a cost factor. It has to go to the inspection and it, you know what I mean? These things…taxes, insurance have to be paid without me having a great benefit from it.*" (James, Königsbrunn) For James carsharing actually is an improvement in the availability of a car, because he knows that when he needs a car he gets one that will work. With his own car this was reverse, making carsharing the more comfortable option, without carrying the burden of caring

for a car. Likewise, Ulrike described the care a car requires as burden she is not willing to carry. With carsharing somebody else is taking care of the maintenance and troubles connected to the car:

"I don't have to change the tires, it doesn't have to go to the inspection. When there is something with it…for me there are two types of cars, it works or it doesn't, right? But that isn't my problem. If it doesn't work, then I write an email to the board and then it is taken care of and yeah I am not stuck with it." (Ulrike, Grafing)

Logically most of such statements came from carsharers from the associations, as in the private arrangements the care necessary for the car is still present, yet shared amongst more people. When people from private arrangements spoke about a relief from ownership, it was because they were also users of StattAuto and experienced this themselves. Interestingly, sharing the burden of ownership created the possibility for strengthening the community of the carsharing group, e.g. for derusting the car in the case of the camping van sharing or changing the tires in the case of Karl-Theodor. Overall, I argue that the meaning of private car ownership is experiencing a significant shift to problematic burden, enabling the changing meanings of the car and automobility.

The ambivalence of flexibility

The aspect of flexibility in carsharing is ridden with tension between carsharing allowing access to and flexibility of the car without owning one and the booking of a car in advance which decreases flexibility. Walter certainly has his doubts about the flexibility of organized carsharing as one can't spontaneously take a car on a sunny weekend, because then all cars are booked. This sometimes keeps him from doing those trips in the first place, resulting in a decrease of flexibility he would have with a personal car. In these cases he misses access to a private car the most. However, he then quickly rationalizes this urge:

"When you look at reality, then you just sit down, look at the next weeks and think on which weekend one actually has the time […] to do something. And then you just book a car and then you have the freedom the same way. […] And I mean, in case you forget to cancel the booking, then you just paid 20 Euros for nothing. That value one should put to freedom." (Walter)

It is for this reduction in flexibility, that Raya and many other private carsharers prefer private carsharing over organized carsharing. In a private sharing arrangement the car is shared amongst less people and it is easier to negotiate the usage of the car amongst the carsharers: *"The car is closer and always available. With StattAuto you had to, when you wanted to go on vacation in August, already book in January. And with StattAuto it gets tight on a nice weekend, when everybody wants to go to the lake."* (Raya) Henri told me that it is important for him that carsharing is as close as possible to owning a private car and that his quality of life shouldn't decrease through carsharing. For him the availability of a car isn't a problem in Grafing. When he knows two or three days in advance he normally gets the car in front of his door and also if he needs a car

spontaneously there is always one available in Grafing somewhere. Hence, the issue of availability and flexibility is ambivalent and seems to have much to do with the ability to plan in advance and how far one is willing to travel to get a carsharing car, in case of the associations.

While carsharing is reducing the flexibility of the car to a certain extent, many of the interviewees also said that carsharing enabled flexibility for them through being able to access a car in the first place, through offering different kinds of cars and through allowing cross-use with other carsharing organizations. Joining carsharing gave Helen the flexibility of being able to get a car when she needs it. Albeit she and her husband own a car, her husband is mostly using it to get to work, wherefore she only had the option to use her bike and public transport. She doesn't need the car often, maybe once a week, but the option of being able to use it when the weather is really bad or there is an emergency with her son, gave her a strong feeling of flexibility. Carsharing also gives the opportunity to use different cars according to the purpose at hand. As the associations usually provide cars with different sizes and different features it is possible to use the type of car that is best suited for the purpose, e.g. a small car for the single-occupancy trip to the next village or the 9-seater van for the family trip with the grandparents: "*The advantage with carsharing is that you can choose from a large bandwidth of different cars. […] That you don't have with your own car. There you decide for one version and you then always use that, even when you are driving alone.*" (Family Schuster, Königsbrunn) Furthermore through the associations one can benefit from the cross-use with other carsharing associations or organizations. This means that a member of the association in Markt Schwaben can also book a car in Grafing, Vaterstetten, Munich or even Cologne through extensive agreements for cross-use. Especially the cross-use in more distant cities is used regularly, when members travel by train and locally need a car: "*Through German Railways, through Flinkster, I can book a car all across Germany at every train station. And also with different bigger [organizations], with Cambio […] we have cooperation agreements. […] that is much more flexible then only having one car at home.*" (Antonio, Markt Schwaben)

Summing up, non-commercial carsharing is enabling the recognition of and relief from some coercive aspects of the car and automobility, while keeping positive aspects of the car. On one side it frees carsharers from the burden of having to care for a private car through collective or external care for the car. On the other side part of the flexibility of the car is maintained through allowing access to many different shared cars, while however the flexibility of accessing a car especially on short-notice is reduced. Thence, the argument I make is that the very basic characteristics of non-commercial carsharing, using and owning cars together, are causing a reconstitution of automobility through altering everyday practices, meanings, identities and subjectivities of automobility. (Kent and Dowling 2013, Dowling *et al.* 2018)

Reconstituting automobility through reconfiguring the automobile subject

In this chapter I explored the meanings of automobility, specifically the role of the car as status symbol and means of liberation and their reconstitution by non-commercial carsharing. Through the production,

reproduction and (self-)governance of the automobile subject, these aspects provided the system of automobility with an immense stability over the last century. Nevertheless, fissures and cracks in the reproduction of automobility open the possibility for a reconstitution of the hegemony of the private car through alternative automobile practices, meanings, identities and subjectivities. (Dowling and Simpson 2013, Kent and Dowling 2013)

In the last sections I delineated some of the cracks and thereby outlined how the meanings of automobility are influenced by non-commercial carsharing. First, also as part of a wider trend, (Kuhnimhof *et al.* 2012, Sheller 2015, Klein and Smart 2017) the car is losing its role as status symbol and becomes understood more as an object of utility. This alteration of the role of the car stands in a close relationship with a more conscious use of the car caused by the practice of non-commercial carsharing and the retreat of the car in everyday mobility. The car ambivalently emerges as a leisure vehicle, which enhances leisure activities but isn't perceived as absolute or necessary requirement. The car as object of utility allows for a more conscious relationship to the car, whereas the car as status symbol was generally perceived as the irrational cause for the problems of automobility. The persistence of the car as status symbol highlights the need to understand "*the individual psychological investment in the car […] to arise out of the sensibility of an entire car culture*" (Sheller 2004, p. 225) wherefore, there can't be a replacement of one meaning of the car by the other, but only a reconstitution of hegemonic meanings with different emphases and their collective integration into cultures of mobility. (Deffner *et al.* 2006, Rau 2008, Sheller 2012) Thence, it is impossible to reconstitute automobility without being entangled in its production and reproduction. (Johansson and Vinthagen 2016)

Second, the dialectics of freedom and coercion inherent to automobility become expressed differently. While automobility predominantly presents itself as pure means of liberation, in this chapter I presented data showing that amongst non-commercial carsharers mobility is also strongly associated with necessity and understood as necessary evil to remedy deficiencies, wherefore the dominating and coercive aspects of automobility are widely recognized amongst non-commercial carsharers. This strongly influences their appreciation of automobility and its conception as realization of individual freedom working against the force of '*governmobility*'. (Bærenholdt 2013) Thence, the relationship between liberation and domination and freedom and coercion is more ambivalent in non-commercial carsharing. On one side, non-commercial carsharers are clearly aware of the positive aspects and associations of automobility such as personal status, flexibility, independence and freedom. On the other side, they also recognize that these positive aspects are coerced onto individuals actually limiting the realization of freedom. Therefore, non-commercial carsharing is challenging the hegemony of the private car not only through shifting the meaning of the car from status symbol to object of utility, but also through a different expression of the dialectics of freedom and coercion

and works simultaneously *"with and against the infrastructures, cultures and socialities of private car dependence"* (Dowling *et al.* 2018, p. 12) and the system of automobility.

The changes in the meanings of automobility and the car I argue for are taking place on an individual level, wherefore the means for the broader reconstitution of automobility need to be sought in the production and reproduction of the automobile subject. In very general terms the automobile subject describes a generic type of person *"oriented towards the sort of movement which cars make possible."* (Paterson 2007, p. 121) In the introduction I already discussed the automobile subject as an essential aspect of legitimizing automobility on the level of everyday practice as its production and reproduction is intimately tied to the individual realization of freedom through enabling people to be the makers of their own travel plans. The automobile subject emerges from the hybrid of the car-driver and is strongly interrelated with the meanings and cultures individually and collectively attached to the car and automobility. (Sheller 2004, 2012, Deffner *et al.* 2006, Rau 2008, Conley and McLaren 2009b, Soron 2009, Doughty and Murray 2016, Randell 2017, Manderscheid 2018) Here I come back to a quote by Paterson from the beginning of this chapter: *"Greening automobility entails a personal odyssey to remake one's identity and re-engage others according to different social logics."* (Paterson 2007, p. 223) What he means with this, is that in order to change the system of automobility, its social relations ingrained in the automobile subject, need to be reconfigured as the potential of counter-hegemony is "related to nurturing particular norms or subjectivities." (Velicu and García-López 2018, p. 67) I showed how non-commercial carsharing bears the potential for this personal odyssey by shifting the meaning of the car towards object of utility and automobility to means of domination. Many of the carsharers experienced a remaking of their automobile identity and subjectivity through giving up car ownership partially or all together reducing car usage in everyday life, having to plan their mobility, changing their mobility behavior, feeling annoyed and pressured by the car and perceiving car ownership as burden. Thence, by changing the perspectives on and meanings of the car in specific and automobility in general, automobility ceases to be conceived purely as the realization of individual freedom, significantly reconfiguring automobile identity and subjectivity. The frequently described ambivalence is a further indication of the ongoing reconfiguration of the automobile subject and a sign of the tension between hegemonic and alternative automobile identities and subjectivities. This becomes even clearer when taking into account that non-commercial carsharers are actively engaged in changing the meanings, identities and subjectivities around mobility and automobility and are also not shy of formulating this into a broader vision for the future of automobility:

> *"It has to have a certain necessity [to use the car]. I think the way it is used often or that there are so many cars…well…I don't know if I am leaning too far out of the window, but I think, if you would have the attitude towards a car as we have, if that would be more common, I dare to claim, that there would be less cars."* (Mountain Hut)

To conclude, in this chapter I showed how non-commercial carsharing is not simply working against the hegemony of the private car, but actually works with the dominant logics of automobility in order to overcome them. (Dowling *et al.* 2018) Non-commercial carsharing is thereby '*puncturing automobility*' (Kent and Dowling 2013) and alters its continuous reproduction by reconfiguring automobile identities and subjectivities, through subtle and quiet but nonetheless resistant practices. (Cohen and Hjalmarson 2018) Hence, the argument I make is that the very basic characteristics of non-commercial carsharing, using and owning cars together, causes a reconstitution of automobility through *"generating new common senses which are materially and symbolically articulated"* (García-López *et al.* 2017, p. 89) in shifting meanings of the car and (auto)mobility. This shift in turn is caused through the reconfiguration of the production and reproduction of the automobile subject and the concurrent emergence of alternative automobile identities and cultures, which in their interrelation ultimately challenge the hegemony of automobility in everyday life (Sheller 2004, 2012, Kent and Dowling 2013, Dowling *et al.* 2018, Lilja and Vinthagen 2018)

Chapter Five *Re-embedding automobility: Ecological critique and counter-hegemonic practice*

In this chapter I argue that the practice of non-commercial carsharing is re-embedding automobility into its ecological context and thereby emerges a counter-hegemonic practice. To support this argument empirically I will first argue for the recognition of reasons as valid causes for agency. Following I will present how for most carsharers concerns about the environmental impacts of private car usage and ownership are the most important reason for practicing non-commercial carsharing, ultimately resulting in an ecological critique of automobility. This ecological critique serves as the basis for more fundamental critiques of automobility, mainstream sharing and consumerism. The carsharers are quite clear on how non-commercial carsharing is related to the critiques above and how non-commercial carsharing allows to resolve them to a certain extent through a two-fold process of re-embedding as contextualization and counter-movement and alternative practices. And while each critique in itself is only partial and specific, acknowledging their interrelation and co-presence reveals non-commercial carsharing's inherent tendency towards counter-hegemony.

1   Reasons as causes for re-embedding

Before starting with the empirical part of this chapter introduced above I will briefly discuss two aspects for the theoretical contextualization of this chapter. First I will give a brief overview of reasons for carsharing in the scientific literature and point out a major methodological shortcoming of seeing reasons as mere abstractions from behavior. Second I will discuss an understanding of reasons as causes for agency which provides a methodological starting point and argument for critique, the emergence of counter-hegemonic practices and a two-fold process of re-embedding.

Reasons for carsharing in the literature

Much of the scientific literature that mentions motivations of carsharing users is based on quantitative surveys and emphasizes economic reasons for carsharing. (Shaheen *et al.* 1998, Katzev 2002, Loose 2010, Costain *et al.* 2012, Efthymiou *et al.* 2013, Lindloff *et al.* 2014, Kopp *et al.* 2015, Schmöller *et al.* 2015, Witzke 2016, Becker *et al.* 2017, Hui, Wang, *et al.* 2017, Burghard and Dütschke 2019) While these quantitative analyses have their advantages to investigate broader populations and trends, it is not possible to gain an understanding of causal mechanisms behind practicing carsharing, which is the interest of my study. (Flyvbjerg 2006) Additionally, these studies mostly follow a regularity understanding of causality in terms of 'A leads to B', wherefore they incorporate flawed assumptions about causes and conditions and tend to reduce these to mere abstractions from behavior. (Collier 1994, Maxwell 2012) For example, Costain *et al.* (2012) state:

"This paper intends to build a comprehensive understanding of the multiple dimensions of users' behaviour including attitude towards environment, attitude towards safety, frequency of usage,

membership duration, vehicle type choice and monthly demand, in terms of total vehicle-kilometre and vehicle-hour travel." (p. 421)

Hereby, they reduce attitudes and reasons to a mere technical and statistical influence on behavior, not recognizing the deeper meaning people attach to their actions. This also becomes apparent in their model, where they reduce environmental attitudes to a theoretical choice for carbon-offsetting quite unrelated to the actual climate benefits of carsharing.

Other studies have used more qualitative data to investigate the reasons behind carsharing. (Franke 2001, Burkhardt and Millard-Ball 2006, Bardhi and Eckhardt 2012, Schaefers 2013, Wilhelms *et al.* 2016, WiMobil 2016, Hartl *et al.* 2018, Hülsmann *et al.* 2018) Some of these studies still showed a highly functionalistic and positivist understanding of peoples' motivations: *"Motivation represents a theoretical construct […] influenced by both affective (emotional) and cognitive elements […] researchers are faced with the challenge to uncover motivation."* (Schaefers 2013, p. 70) This understanding doesn't recognize people as being capable of reasoning about facts and negates the influence of everyday life on values and reasons. Others applied qualitative methods as part of a mixed methods approach through focus groups, which enabled a deeper understanding of the role of environmental reasons for carsharing, which nevertheless were found a merely being "*a nice bonus."* (Hartl *et al.* 2018, p. 94; see also Bardhi and Eckhardt 2012) It is not on me to judge these findings, however, in the only decisively qualitative interview study by Franke, who describes reasons as having a causal influence and discusses how multiple reasons and structural effects co-determine the practice of carsharing, *"the majority of participants change from the car because of a mixture of ecological, economic and pragmatic reasoning and the typified 'pure cost minimizer' poses a small minority."* (2001, p. 192, author's translation)

The results of my study at part resemble what is known and discussed in the carsharing literature about why people practice carsharing. However, there are two important differences for which I in the first empirical section of this chapter. First, practicing carsharing is co-determined by economic, environmental and other reasons as well as structural conditions beyond the influence of the economically rational individual, making the decision for practicing carsharing rather complex and multi-causal and difficult to understand only through quantitative means. Second, and more importantly, I argue that a missing understanding of reasons, values and beliefs as legitimate causes instead of mere abstractions leads to the misconception of carsharing being predominantly influenced by economic benefits.

Reasons as causes

For overcoming this misconception I bring forward the methodological argument that people's reasons have to be understood as causes for action, whereby the environmental reasons for non-commercial carsharing gain a significant importance in enabling re-embedding, critique and counter-hegemonic practices.

According to Critical Realism one of the emergent powers of humans is *"the power to act on the ground of reasons."* (Collier 1994, p. 118, see also Sayer 1992, p. 110 ff., 2000, Bhaskar 1998a) Therefore *"the meanings, thoughts, beliefs, emotions, values, and intentions of individuals are neither abstractions from behavior nor reducible to neurological or other physical phenomena.*" (Maxwell 2012, p. 16, see also Sayer 2000, p. 96ff) but have to be understood as real mental phenomena, which have causal powers of their own:

> *"Unless a reason could function as a cause, there would be no sense in a person evaluating (or appraising) different beliefs in order to decide how to act. For either a reason will make a difference to his/her behavior or it will not. In the former case it counts as a cause. In the latter case it is logically redundant."* (Bhaskar 2005, p. 101, quoted in Collier 1994, p. 155)

The causal effects of reasons are interacting with other causes from other strata, e.g. social structures, in the open system of society, whereby they are difficult to observe directly. Yet as causes in an open system they *"co-determine events in the open systems of the world with divers other causes which pre-exist them and operate alongside them."* (Collier 1994, p. 198, Bhaskar 1998b, Manicas 1998)

Developing this argument of reasons being causes for action further is Andrew Sayer who claims that reasons and underlying values and beliefs are causes but not "*merely subjective and beyond the scope of reason; people manifestly do reason about their values.*" (Sayer 2011, p. 56) He thereby stresses that not only are facts 'value-laden', which is widely recognized in the social sciences, but also that values are 'fact-laden', (Bhaskar 1998c, Sayer 2011, Smith 2013) supporting *"the idea that individuals' physical contexts have a causal influence on their beliefs and perspectives."* (Maxwell 2012, p. 20) This implies that reasons and values are intrinsically related to what they are about and thence are also closely connected to everyday practices and experiences: *"Reasons are beliefs, but beliefs are not external to the ongoing life of desiring and acting; for desires, emotions and intentional actions all presuppose beliefs. 'Reasons, then, are beliefs, rooted in the practical interests of life.' (Bhaskar 2005, p. 106)"* (Collier 1994, p. 155f) Not acknowledging this relation results in seeing normativity, the basis for reasons and values, as free-floating mere opinion without any connection to our knowledge and concern about the world, rather than the outcome of a continuous evaluation of everyday life. (Bhaskar 1998c, Sayer 2011) While this might appear as an overly theoretical and philosophical argument it has an important implication for the conceptualization of human agency. Usually human agency is only conceptualized as the ability to make own decisions and take action, without providing an explanation of the reasons for this action, as these are seen to be subjective and out of the scope of scientific interest. Yet,

> *"whatever kind of rationality or reason we are interested in – theoretical, instrumental or substantive and practical – it is not merely a matter of logic or consistency or efficiency or goodness of fit to the world, for it presupposes this orientation to the world of care or concern, otherwise it is not clear why we should*

want to be rational or reasonable; all forms of reasoning have to be driven by something." (Sayer 2011, p. 140)

Thence, as humans we do not only have causal powers and the ability to reason about them, but we are also concerned about the world we live in and things matter to us because they have meaning in relation to our well-being: (Smith 2013) *"Describing 'what something means to me' cannot reasonably be glossed merely as expressive of the speaker's feelings; it is about something: their well-being or ill-being, and that of their attachments and commitments."* (Sayer 2011, p. 141)

Therefore, in contrast with the literature on carsharing I recognize the carsharers as "*sentient beings*" (Sayer 2011, p. 3) who are capable of reasoning and acting according to their reasons, beliefs and values. Reasons thence are not subjective, purely constructed, entities without any causal influence, but instead I argue that reasons have to be understood as the outcome of reasoning based on values and facts in everyday life, as the expression of a relationship of concern with the world and therefore as causes for agency. (Manicas 1998)

Consequentially, the reasons provided by the carsharers play a significant role in recognizing the ecological context of automobility and positioning non-commercial carsharing as counter-hegemonic practice. The concept of re-embedding captures this two-fold process with its two meanings of contextualization and counter-movement. (Giddens 1991b, Barham 1997, Polanyi 2001, Gibson-Graham *et al.* 2016) The first process of re-embedding refers to the recognition of the interdependence and interrelation between economy, society and nature, whereby it provides a social and ecological contextualization of everyday practices. (Gibson-Graham *et al.* 2016) The second process of re-embedding refers to a counter-movement against the dis-embedding tendencies of the capitalist mode of production. (Thorne 1996, Polanyi 2001) Ultimately, through re-embedding automobility non-commercial carsharing influences local processes of change in the mobility system through altering everyday practices and the way social structures are reproduced by the individual.

As already outlined above, the next section will deal with environmental reasons for practicing non-commercial carsharing and argue that through this ecological critique automobility is re-embedded into its ecological context. Following I will present multiple critiques emerging from the ecological critique that in their interrelation form of total critique of automobility and position non-commercial carsharing as inherently counter-hegemonic. In the discussion I will show how this counter-hegemonic character of non-commercial carsharing is implicitly and explicitly articulated and expressed by the non-commercial carsharers.

2 Environmental issues as reason for practicing non-commercial carsharing

The first empirical section of this chapter introduces environmental issues as a motivation and reason for practicing non-commercial carsharing. At the beginning of the section, I briefly go into economic reasons for practicing non-commercial carsharing, to show afterwards that they are not explaining the carsharers

practice and engagement sufficiently. The environmental benefits of carsharing are a second major motivation and reason for practicing non-commercial carsharing whereby automobility is re-embedded into its environmental context. The economic and environmental reasons were often assumed as self-evident by the interviewees, at least in the position of being interviewed by someone who is doing research on carsharing: *"Yeah well, the environmental things. And that I had to save money, that I wouldn't have been able to afford a car. Actually out of reasons of sanity. And, so only rational reasons and yeah, that it is just stupid, when it is standing around. So ecological reasons."* (Judith) This statement by Judith is not an exception as interviewees often said things like 'obviously because of the costs and the environment', whereby these reasons were often taken for granted and intertwined. Yet, for analytical purposes I attempt to sharpen these positions as on one side belonging to thinking in terms of pure economic rationality and on the other side thinking in a more socio-ecological and relational mindset. Ultimately, in accordance with the changing meanings of the car and automobility, both economic and ecological reasons challenge the hegemony of the private car either through breaking with the myth of the personal car as the cheapest option for transport (Andor *et al.* 2020) or through a concern of the environmental impact of car usage and ownership.

2.1 Beyond economic rationality

The economic reasons for joining non-commercial carsharing can be briefly summarized in three categories: 1) not wanting to buy a(nother) car, 2) carsharing is cheaper than a personal car, and 3) carsharing as the only affordable access to a car. Overall, amongst the carsharers I interviewed the personal car was dominantly understood as not making sense economically: *"It is also uneconomic, because it is standing around outside. I have read these statistics that a car on average is standing around for 23 hours a day. I mean, seriously! Think about that!"* (Hannah, Grafing) This statistical characteristic of the personal car[13] was referred to frequently and the car standing around was used as general argument for the economic and ecological inefficiency of the personal car. Also interviewees who never owned a car were quite aware of the costs associated with a personal car, which include taxes, insurance, maintenance, repairs and purchase. The decision then to participate in carsharing is also a decision against the costs of owning a personal car and basically all interviewees share this conviction of the personal car being economically inefficient under certain conditions.

The first way carsharers talked about economic inefficiency was that they didn't want to buy a(nother) car. Erich for example has to give up his car because he couldn't get it through the security check (TÜV[14])

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[13] This statistic is unfortunately correct and in many cases even more drastic. In Germany the average car is moved 46 minutes per day, which equals only 3% driving and 97% standing time. (Nobis and Kuhnimhof 2018) For an international comparison see. (Barter 2013)

[14] TÜV is the abbreviation for 'Technischer Überwachungsverein' (Technical surveillance association) and a generic term for associations making technical security checks. Every car in Germany has to go through a security check that is done

anymore. At the time of our interview he actually was in an ongoing debate with his family on how to deal with their prospected carlessness. Erich was certain that he is not "*again going to invest 20,000 Euro into a car,*" (Erich, Grafing) wherefore by now they became car wardens and got rid of their personal car. While completely replacing the personal car is one option of not buying a(nother) car, for others carsharing was a good way of replacing a second household car. These often are even more inefficient than the average personal car: "*Why should I pay insurance and all that stuff when the car is standing around six of seven days a week? And on the day that I need it, I use it only for two hours.*" (Helen, Grafing) Through joining the carsharing association, Helen never had to get a second car and spared herself from the costs and time associated with its maintenance. Likewise, Christa and her husband hope that through establishing carsharing in Anzing they don't have to get a third car in their household for their kids and can maybe get rid of their second car once the kids moved out. One reason for joining and participating in carsharing is thence to "*not again get a car, in order to not have another one standing around.*" (Family Schmidt, Anzing)

Second, many carsharers preferred carsharing as the cheaper option, sometimes co-occurring with not wanting a(nother) car, but also independent from it. According to Simone, many people only realize the costs of using a car when they are forced to calculate the costs of their personal car against the costs of carsharing. Also here Helen is a good example, as she told me that it took her a few times of using carsharing to get over the fact that picking up her son at her parents place 20 kilometers away costs her "*15 Euro for just picking him up…and then I think again, for that the car isn't [standing around] in front of my door and I don't have to pay for anything else and even the fuel is included.*" (Helen, Grafing) For their current car they pay 900 Euro per year only for the insurance and she is convinced that she won't even spend that on carsharing per year. Likewise, for most private carsharing arrangements the cheaper costs associated with a shared car were an important aspect: "*One thing is obvious: The costs are much lower.*" (Karl-Theodor)[15] I could continue telling stories from every single person and they would all result in the same conclusion: Carsharing was the cheaper option compared to a personal car (first, second or more). The main reason for this was the infrequent use and need for a car in everyday life. The predominant forms of transportation are public transport and cycling and the car only serves a small number of specific purposes, wherefore the fixed costs of purchase, taxes, insurance and maintenance are much more present and dominant.

Third, for some interviewees carsharing is the only way to allow access to a car as they aren't able to afford a personal car. Rosa, from the board of the association in Markt Schwaben, told me that this is an important aspect of carsharing, which yet isn't openly emphasized due to the stigma attached to being poor, especially in the affluent suburbs of Munich: "*We don't emphasize this social aspect, because it isn't cool.*

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by a TÜV every two years, which is colloquially referred to 'getting TÜV'. Failing this test means that the car is not save to be driven and that it has to be taken out of operation.

[15] Beverly, Selma, Judith, Raya, Nancy, Louis, Walter, Mimi, August, Ellen and Martha all made very similar statements.

Being poor isn't cool. Albeit we are doing this a lot, nobody talks about it aloud." (Rosa, Markt Schwaben) Also Karl, from the board of the association in Vaterstetten, said that the aspect of providing access to a car for people who can't afford a personal car became more important during the years the association was growing, especially for *"people who can't afford a car and have to afford a car so that the other's don't see that they can't afford a car."* (Karl, Vaterstetten) Amongst others, Judith and Ellen said that by themselves they couldn't afford supporting a personal car. Only through sharing the costs of owning a car through sharing they are able to have access to a car:

> *"It just was too expensive for me to maintain [the camping van] by myself with all the costs, repairs and the regular taxes and insurance. And then I asked if we don't want to share it. […] When we had the idea to share, then the two of us were still not sufficient, it still was too expensive, there needed to be more [people]."* (Camper)

Nevertheless, the people who can't afford a personal car are a minority amongst the carsharers I spoke with and for the majority carsharing simply is the cheaper option instead of a monetary necessity. This is actually supported by other studies on the socio-demographics of carsharing users, which assess that carsharing users tend to be more affluent than the average population. (Schreier *et al.* 2015, WiMobil 2016, Hülsmann *et al.* 2018) For Antonio the cheapness of carsharing is a good argument that should help in spreading carsharing beyond groups that are concerned about the environment or are already inclined to sharing. While this certainly is the case, Selma offers another explanation in terms of a privilege of time and money: "*When [you] have to work hard morning to evening and then only fall into bed tiredly and at the same time have to look which offers there are at Aldi so that [you] can make ends meet, then [you] have different topics in life than [carsharing]."* (Selma) These contrasting opinions open an interesting discussion on the nature of the reasons behind carsharing. According to Antonio the economic argument is strong for convincing people of carsharing beyond the supposedly 'ideological' ecological reasons. Yet, Selma's argument suggests that the pure economic consideration might not be a sufficient reason for joining carsharing.

Therefore, I argue that the decision to participate in non-commercial carsharing goes beyond 'rational', 'objective' and measurable economic choices about individual costs and benefits. These reasons beyond economic rationality are related to environmental concerns, critiques of automobility emerging from these concerns and changing meanings of the car and automobility. The intention for practicing carsharing is not just to save as much money as possible, but also to change car use and mobility more generally in a more ecological direction. Even carsharers who said environmental issues weren't important for them, are nevertheless aware of the environmental benefits of carsharing compared to private car ownership and usage. This is not at all inconsistent with existing research on reasons for practicing carsharing presented above, however I strongly emphasize its methodological implication: Practicing carsharing emerges from

everyday reasoning about values and facts within a relationship of concern with the world and is co-determined by a complex relationship of different individual reasons and social structures, wherefore it cannot be reduced to economic rationality based on abstractions from individual behavior or stated preferences. (Collier 1994, Maxwell 2012)

Thence, while economic rationality certainly influenced the decision for practicing carsharing, for most carsharers environmental reasons actually played a strong or even the main role for joining and practicing carsharing. (Franke 2001) I will first present these environmental reasons for practicing non-commercial carsharing and then discuss how carsharing also serves for the articulation of environmental conscience and provides an ecological critique of automobility. Taken together these three aspects re-embed automobility into its ecological context. (Gibson-Graham *et al.* 2016)

2.2 Environmental reasons for practicing non-commercial carsharing

Most carsharers had a strong awareness of the environmental impacts of car ownership and use in connection with the inefficiency of the car because of its long standing time. For Mariarosa, practicing carsharing is to "*contribute that there is only one instead of ten cars standing around.*" (Mariarosa, Grafing) Her main motivation were the environmental issues of use of space, noise and emissions as the main problems of car traffic. Friedrich and Martha both said that they try to drive as little as possible out of concern for the environment. The car Friedrich and his wife own is therefore only used for approximately 100 hours a year. For Martha and her husband this means that they are not getting a car at all: "*It doesn't make sense to get [a car], when you don't plan on using it.*" (Martha) More generally Martha thinks that it doesn't make sense to own things that one doesn't use very often due to the resource consumption attached to their production, actually opposing the common sense of consumerism. (Botsman and Rogers 2010) This idea is shared by Murray who described himself to me as an 'ingrained environmentalist', which in its German form as "*eingefleischter Öko*" (Murray, Erding) carries a connotation of putting concerns with environmental issues center stage. He is part of the city and regional parliament for an ecologically focused small political party and environmental protection for him is "*planting a tree and still not flying.*" (Murray, Erding) Therefore the environmental benefits of carsharing were also his main motivation for becoming part of the board of the association in Erding: "*For me the ecological thought is the basis of my decision to do something about [carsharing].*" (Murray, Erding) The environmental concerns about car driving are shared amongst many carsharers, for example also by August for whose family an ecological lifestyle in general is important. Without sharing the camping van they still wouldn't own a car and remaining within an ecologically justifiable car usage of two to four thousand kilometers as a family is an important part of their mobility behavior.

The motivation to participate in carsharing due to environmental reasons is also present on the organizational level of the carsharing associations. Rosa told me the association in Markt Schwaben wants to

get the 'blue angel'[16] for carsharing, requiring an average fleet emission below 120g CO_2/km, which so far isn't achievable for the association due to the higher emissions of their 9-seater vans. Furthermore, the people with an organizational overview of the associations emphasized that carsharing considerably contributes to a reduction of car trips, especially when there is no private car left in the household: *"We have the knowledge, that in the summer months carsharers often go by bike, which means they avoid car trips."* (Elmar, Grafing) Most importantly this is manifested in the statutes of the associations which state the purpose of the association similarly to or exactly like the association in Erding: *"The purpose of the association is the promotion of environmental protection in the area of mobility and transport through carsharing."* (Carsharing Erding e.V. 2015)

Besides a general perception of carsharing being good for the environment, the main environmental benefit of carsharing was seen as the saving of resources. Most were aware of the fact that a carsharing car is statistically replacing personal cars, whereas the exact number was varying in different interviews[17]. Yet, the reduction of resource consumption also when replacing second cars due to decreased car production through carsharing is a strong reason for participating in carsharing: "*Sharing a car for many people is also from the resources of the car itself much more efficient. […] Simply because a car that is built once and needs certain resources in that process is shared by many persons. Already because of this I find it much better."* (Jean-Paul, Grasbrunn) This is also the understanding brought forward by Ulrike: *"That this whole resource of the car, so car production etc. That you can steer this a bit, by maybe not everybody having a car in front of their door."* (Ulrike, Grafing) Lastly, Robert also sees the reduction of produced cars as the most important environmental benefit of carsharing, especially as people often even have two cars standing around: *"That I find absolutely important, because as I said, many families nowadays have two cars, at least outside of Munich for sure. And these, also these cars often just stand around somehow. Probably most of the time at work in the parking garage or at home."* (Robert, Markt Schwaben) Additionally, less produced cars not only means the saving of resources and less environmental destruction but also the possibility to use the urban environment differently through having less cars on the streets and more cycling lanes, cafés, parks and playgrounds.

This aspect of the consumption of space through cars was a second environmental aspect that served as an environmental reason to join carsharing. Sometimes the space consumed by cars was vividly juxtaposed with alternative uses as in the case of Robert written above or by counting how many bike parking spots carsharing allows:

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[16] The 'blue angel' is a certificate for a high environmental standard of consumer goods.
[17] The exact number also varies in the scientific literature depending on the type of carsharing and the settlement structure. (Hülsmann *et al.* 2018)

"So one can also produce four cars [instead of us sharing one]. The four cars also require…they also stand around the whole day on the streets and take away eight bicycle parking spaces each. I alone wouldn't buy a car I think…I wouldn't be interested in a car, but a shared car, that I find a good idea." (Karl-Theodor)

The argument for a different usage of space was probably strongest with Selma, who also actively supported a public referendum on reducing the consumption of space. She described to me in great detail how the main street in her village consists of nothing but parked cars and she therefore considers it dead space that needs to be used differently. For her carsharing thus essentially is also a question of spatial justice: *"How do we distribute space? […] When I want that people move differently, then I have to provide the conditions for that and that is a question of space. We have a lot of dead space, through all these standing cars."* (Selma) (Strößenreuther 2014, Gössling *et al.* 2016)

Bringing these environmental aspects together on a more abstract level was Ivan, for whom sharing in general should be connected to the idea of sufficiency: *"At the beginning is the thought of sufficiency. How can we make use of the knowledge about the limitedness of the planet or of specific resources? Then sharing can be an aspect of that."* (Ivan) For him sufficiency is related to the question of when there is enough of something, be it driving a car or making vacations through A*irbnb*. (Schneidewind 2017, O'Neill *et al.* 2018, Waygood *et al.* 2019) His private carsharing arrangement is directly related to this idea as it is a way to limit his use of the car and the associated consumption of speed and distance. Ivan isn't the only one who abstracted the particular environmental reasons for carsharing onto a more general level as I will present in the forthcoming subsection on ecological critique. But first I want to show how non-commercial carsharing can more generally provide a way for articulating a conscience for the environmental issues of automobility and beyond.

Articulating environmental conscience through non-commercial carsharing

What I presented so far can be considered as rather specific environmental reasons for joining non-commercial carsharing, such as resource consumption and space usage. Yet when talking about environmental issues connected to joining carsharing, many carsharers also referred to a more general understanding of gaining environmental conscience about the impacts of automobility in addition to the general perception of doing something good for the environment through carsharing.

This became particularly apparent through carsharers for whom environmental reasons weren't present from the beginning but developed over time. Ulrike is one of these and she openly admits that when she joined carsharing it was mainly a practical decision of saving money and not having to care for her personal car. Only after practicing carsharing for a while the environmental benefits of carsharing became more important to her: *"In the meantime I also really think it is good because of ecological reasons. Because, I don't know, 80% of its time a car is just stupidly standing around somewhere."* (Ulrike, Grafing) Also Raya told me that her attitude towards automobility changed in the years she was privately sharing a car. When Raya used

to live at the periphery of the city, she and her husband each had their personal car: "*So, yeah, we didn't really think about it.*" (Raya) In our interview, after privately sharing a car and being a member of StattAuto for around 15 years she thinks completely differently: "*[From a resource consumption perspective] it is really unecological to have a car that you don't use.*" (Raya) Thence, general environmental concerns are not only a reason for joining carsharing, but can also be an outcome of practicing carsharing. This rather broad and generic perception of carsharing being 'good for the environment' was very common amongst carsharers and framed in direct relation to the own behavior, awareness and conscience in relation to the environment. Selma, for example, directly relates her private carsharing arrangement to the development of an environmental awareness in relation to car-driving:

> "*My consumption behavior in relation to the car changed over time. I used to drive completely uncritical. […] And this more critical attitude only developed over time. […] Through that I started to question my own behavior and started to use the car less. Therefore it was standing around more, and that was the way.*" (Selma)

Erich also relates his joining of carsharing and getting rid of his personal car to a more general environmental awareness. He thinks that by completely switching to carsharing he is able to change his environmental impact, because if everybody would live like him, "*we would need to build dams to the sky.*" (Erich, Grafing) At some point he actually had the revelation that "*what I lived and what I said were not matching at all.*" (Erich, Grafing) He told me about many years in his job, where he was constantly flying around wearing a Greenpeace shirt, preaching animal welfare, but still buying cheap meat in the discounter supermarket or making unnecessary car trips for a cup of coffee. After his revelation, carsharing is one of his ways of trying to make up for his way of life. Thereby carsharing is embedded into his broader worldview and ambition of a more ecologically-conscious society and gives him the feeling of "*trying to change something in a very very small scope.*" (Erich, Grafing) Also Karl described to me some kind of revelation which provided one of the reasons for practicing carsharing. Many years ago he was slowly realizing the ecological problems in relation to automobility and felt like he has to do something against them: "*When you once realized this madness, this goes step by step and then you finally understand. And then you question this and that and also the other thing. Well then you just have to do something.*" (Karl, Vaterstetten) Knowing this feeling myself very well, I was intrigued by this statement and was happy that after a few minutes he came back to this point: "*And that I owe to myself. […] I want to be able to look at myself in the mirror in the morning. I don't want to say to myself, you knew everything, but didn't do anything.*" (Karl, Vaterstetten) So for Karl, carsharing stands in a strong relationship of not having to feel guilty about the ecological state of the world and doing something for making it a better place. (Pelletier *et al.* 1998, Pink 2009, Huang *et al.* 2014, Steg 2016)

Likewise, for Cinzia carsharing stands in relation to the environmental influences of movement and it is important for her "*that I don't use the car every day and don't constantly fly somewhere.*" (Karl-Theodor) More specifically one of the reasons the group around Karl-Theodor wanted to share a car was to not have a car standing in front of the door, because "*I don't want to use it all the time and also don't need it all the time.*" (Karl-Theodor) Therefore instead of having a personal "*pile of metal*" (Karl-Theodor) standing around, they prefer the car being shared amongst them and their wider circle of friends. Also for Nancy and Hannah carsharing is connected to their relation to the environment. Albeit, Nancy said that environmental reasons are only something she and Louis could pride themselves with instead of an actual reason for sharing the car, she told me that sharing her car reduces the burden of working against her own beliefs and goals in environmental terms, because *"if I already have a car, then I want it to be used, so that somebody else doesn't need a car as well."* (Mountain Hut) Lastly, Hannah, who was ecologically politicized through organic farming and only later became critical of the car, told me that sharing the car and not flying compensate for her feeling stupid when she is sitting alone in a car. These last statements already point to how non-commercial carsharing provides an ecological critique of automobility. (Franke 2001)

Ecological critique of automobility

I already referred to Ivan, for whom carsharing in specific and sharing in general has to start from the goal of sufficiency. As the inefficiency of automobility is so obvious in the way the car is used, carsharing is a good starting point for "*going down a path of sharing,*" (Ivan) whereby he directly connects carsharing with a reduction of environmental impact in opposition to automobility with its high environmental impact. Clara and Antonio also make this connection between carsharing, sharing and ecological benefits. Clara generally sees carsharing within the broader rise of sharing and a need to move towards more ecological practices: "*I think that all these sharing offers are going to increase. And I think it is really important for sustaining our planet earth a bit longer.*" (Clara, Vaterstetten) Likewise, Antonio sees carsharing as a prime example and front-runner of the sharing economy, which at least in Markt Schwaben and the region started long before the sharing economy was a thing and he is "*convinced, that it…how should I say…would be a better world, if one would do and use more things collectively. […] Carsharing definitely is part of this, in case we want to manage all the problems we have at least a little bit.*" (Antonio, Markt Schwaben) Non-commercial carsharing was frequently connected to other trends and societal developments, of which the trend towards more sharing is one and the energy transition, excessive space consumption and the waste of resources are other ones. Together carsharing and the trends it is connected to, are seen as potential resolutions for the ecological problems of automobility, thereby relativizing automobility from a reincarnation of individual freedom and comfort to an ecological problem that requires a solution. Thus, practicing non-commercial carsharing can also be understood as a critique of the environmental impact of automobility or as a genuine ecological critique of automobility.

Without making it explicit this already shined through at quite some instances in the last subsections, e.g. Selma criticizing the dead space in Neubiberg, Ulrike criticizing the resource consumption of car production and the statutes of the carsharing associations. Yet, there were occasions when the ecological critique of automobility through non-commercial carsharing became even clearer. For example, when Mariarosa talked about electric mobility. For her electric mobility is far from a solution to the environmental problems of automobility. Mariarosa told me that the association is thinking once in a while about getting an electric car, but after all, these come with their own problems and don't solve all problems of personal cars: *"Electric cars also need a parking space, they are also built and this whole Lithium discussion also comes with its issues…"* (Mariarosa, Grafing) Therefore instead of replacing every fossil fuel car with an electric car the solution that is perceived to be the most ecological is to *"have less cars but still be mobile,"* (Mariarosa, Grafing) which can only be achieved through carsharing. Another occasion was when Georg directly voiced the critique that many cars should just be removed from the streets through increased sharing because there is just too much waste of resources connected with them:

> *"When you think about what is wasted there, all these resources, the whole automobile industry. […] For the conscience it would be better to get rid of [cars]. Or at least don't participate in it that much, or share it with each other, right? So that the thing that is wasted is at least used to capacity."* (Family Schmidt, Anzing)

Similarly, James criticizes the ecological sense of everybody in his neighborhood having two SUVs: *"You hear that the number of cars registered every year in Germany is constantly increasing, and that every family actually has two cars and most often even two SUVs or something similar, which are not really energy friendly and all these things…"* (James, Königsbrunn) While on one side he is criticizing the ecological sense of contemporary automobility, on the other side he is also implicitly raising the question of 'what does one actually need?' connecting this critique to broader issues of consumerism and sufficiency. (Kallis and March 2015, Schneidewind 2017) Helen was probably one of the carsharers who expressed the ecological critique of automobility most drastically:

> *"I'm not perfect in relation to the environment and society. At least I try to go a certain way…and I have a kid at home, why should I make his future even worse than it will probably be anyways? […] Nobody is perfect, but you can do at least what makes a bit of sense. And why should there be even more cars on the streets which you actually don't need at all."* (Helen, Grafing)

Albeit in her case carsharing is only replacing a second car, with 'doing what makes a bit of sense' she is openly questioning the common sense behind the need for second cars and the central position of automobility for everyday mobility. Additionally, for Helen it is important to have an awareness about the world around oneself and how it should continue into the future and owning two cars isn't at all reconcilable with her idea of a livable future for her son. All these statements were somehow summed up by David who

told me that he "*actually also supports the idea [behind carsharing]."* (David, Königsbrunn) When I asked him to specify what he means with the idea behind carsharing he explained that it is important to him how he relates himself to the environment and the society and with which environmental impact he gets around. This implies, as is the case with many carsharers, that non-commercial carsharing in opposition to personal car ownership enables a good relationship to the environment and to society by saving resources. Thereby, practicing non-commercial carsharing is an inherent articulation of an ecological critique of automobility.

2.3 Re-embedding automobility into its ecological context

At the beginning of this chapter I presented manifold reasons and arguments for practicing non-commercial carsharing from an ecological perspective. Briefly summed up, practicing carsharing reduces car ownership and usage, whereby it reduces space consumption and additionally saves resources and emissions. (Martin and Shaheen 2011, Loose 2016, Sommer *et al.* 2016) Non-commercial carsharing is thereby a way for articulating environmental awareness and consciousness and provides a strong ecological critique of automobility. Overall, the reasons for practicing carsharing go beyond the usually emphasized economic benefits from the literature on carsharing. (Bardhi and Eckhardt 2012, Costain *et al.* 2012, Hartl *et al.* 2018) Instead, I argue that carsharing is seen as a matter of concern in relation to environmental issues and the decision for practicing carsharing emerges from everyday reasoning about values and facts within a relationship of concern with the world and is co-determined by a complex relationship of different individual reasons. (Franke 2001, Sayer 2011, Maxwell 2012) For most carsharers the environmental benefits carsharing provides, e.g. reduced resource consumption or less appropriation of space by cars, are important 'fact-laden' reasons for practicing it. What becomes clear from the reasons and critiques in relation to ecological aspects of non-commercial carsharing presented so far is that *"the ethics of car consumption at a global level (i.e. in terms of an abstract concern for the environment)"* (Sheller 2004, p. 236) are a pressing concern amongst non-commercial carsharers and strongly influence their reasoning about carsharing and automobility. This recognition of environmental and other damages through car consumption provides an important cause for agency to change hegemonic everyday practices of automobility. Furthermore and deepening this ecological critique, I argue that not only non-commercial carsharing is regarded and valued as ecologically better, but also that automobility is again put in relation with its ecological context. Because carsharing is explicitly seen as a way of dealing with the negative ecological consequences of automobility, automobility is re-evaluated and re-embedded into its ecological context of Extractivism and the climate crisis, which significantly differs from how automobility is hegemonically valued in terms of individual freedom and comfort. (Miller 2001a, Böhm *et al.* 2006, Paterson 2007, Conley and McLaren 2009a, Urry 2010, Acosta 2013, Marriott and Minio-Paluello 2013)

I so far referred to re-embedding without making its theoretical content and meaning explicit. Therefore, before continuing to the critiques articulated by the carsharers in the next section I will provide a theoretical

frame for the use of the term re-embedding and explain how it relates to the brief introduction on reasons as causes for agency and connects to the remaining sections of this chapter.

The concept of re-embedding has its theoretical origin in the work of Karl Polanyi. In his most-known book *The Great Transformation* he argues that

"The market pattern, on the other hand, being related to a peculiar motive of its own, the motive of truck or barter, is capable of creating a specific institution, namely, the market. Ultimately, that is why the control of the economic system by the market is of overwhelming consequence to the whole organization of society: It means no less than the running of society as an adjunct to the market. Instead of economy being embedded in social relations, social relations are embedded in the economic system." (Polanyi 2001, p. 60)

This has two important implications. First, the economy is not an autonomous system but interdependent and interrelated with society and nature. (Adaman *et al.* 2003, Robbins 2004, Quilley 2012, Herrmann 2016) Simply put, this means that there is no profit on a dead planet. While this appears like an obvious statement the ongoing impairment of the environment by capitalist accumulation highlights the ongoing dominance of profit maximization and the deeply flawed assumptions at the heart of capitalist production. (O'Connor 1998, Polanyi 2001, Klein 2014, Vetlesen 2015, Naess and Price 2016) Second, it implies that the economy is deliberately dis-embedded from the social and ecological contexts of social reproduction and its natural conditions through an exclusive focus on profit maximization (O'Connor 1988, Adaman *et al.* 2003, Sandbrook 2011) *"directed by market prices and nothing but market prices."* (Polanyi 2001, p. 45) Independent from Polanyi, Giddens described dis-embedding as the *"'lifting out' of social relations from local contexts of interaction and their restructuring across indefinite spans of time-space"* (1991b, p. 21) and as an inherent consequence of post-modernity. Thus, also without taking a decidedly critical perspective, it appears that the ongoing development and expansion of the capitalist mode of production results in a de-contextualization of social (and natural) relations.

However, and this is the second implication, Polanyi argues that this process of dis-embedding also causes *"a countermovement […] against a dislocation which attacked the fabric of society,"* (Polanyi 2001, p. 136) struggling for re-embedding the economy into its societal and ecological context along the *"integrating axes of redistribution, reciprocity, house-holding and exchange."* (Quilley 2012, p. 214) The relation between dis-embedding and re-embedding is known as the 'double movement', which Polanyi invigorates as the moving force of the capitalist mode of production.[18] In less dramatic terms Giddens also describes re-

[18] Fraser (2013, 2017) emphasizes how re-embedding needs to pay attention to a dichotomy between market and society and extends Polanyi's 'double movement' to a triple movement between marketization, social protection and emancipation. Within Polanyi's 'double movement' re-embedding can easily lead to a totalitarian form of social (or natural) protection, rolling back the advancements of liberal societies in women's rights, the abolishment of slavery and

embedding as a counter-movement against dis-embedding: *"By [re-embedding] I mean the reappropriation or recasting of disembedded social relations so as to pin them down (however partially or transitorily) to local conditions of time and place."* (Giddens 1991b, p. 79) Through conceptualization re-embedding as counter-movement it has been argued that *"'re-embedding' [becomes] a way of talking about resistances to the unevenness and disempowerment,"* (Thorne 1996, p. 1362) wherefore re-embedding has been applied in research on social movements. (Barham 1997, Raynolds 2000, Lindenbaum 2016) Furthermore, as particularly included in the definition of re-embedding by Giddens, the counter-movement to dis-embedding involves a contextualization of social relations and practices. Based on this realization, Gibson-Graham *et al.* argue that the re-embedding of economies into ecologies enables to recognize *"that all life forms are involved in negotiating livelihoods in habitats that are interconnected with others."* (2016, p. 713) This argument emphasizes the relational ontology behind the concept of re-embedding and not only resonates with Polanyi's primacy of social relations over economy but also with socio-ecological system thinking and ecological economics insistence on regarding the economy as a sub-system of society and ultimately nature. (Georgescu-Roegen 1987, Robbins 2004)

In the literature, re-embedding is often understood as a process which takes place on the structural level, (Adaman *et al.* 2003, Hustinx and Meijs 2011, Sandbrook 2011, Quilley 2012) yet I argue that re-embedding can also take place on an individual level and in my cases plays an important role for the agency of the carsharers. (Giddens 1991b) Also on the micro level, re-embedding essentially refers to two interrelated meanings, derived from the two above implications of Polanyi's argument. On one side, re-embedding refers to the recognition of the interdependence and interrelation between economy, society and nature. (Giddens 1991b, Robbins 2004, Gibson-Graham *et al.* 2016) On the other side, re-embedding refers to a counter-movement against dis-embedding in the form of *"societal protection from [the market's] adverse effects […] from a variety of groups that organize around particular causes to restrain the action of the market […] collectively in a return movement, seeking ways to channel and restrict market impacts."* (Barham 1997, p. 241, see also Buechler 2000, Wright 2019)

So far, in this section I mostly described the first meaning of re-embedding: Through practices of non-commercial carsharing automobility is again individually connected to and re-embedded in its ecological context whereby ecological damages have a significant influence on the perspectives, valuations and appropriation of automobility. Thereby, automobilities coercion is broadened from coercing the self into flexibility and 'governmobility' to a recognition of the externalization of its negative impacts, forcing others into deteriorating life conditions on narrow pedestrian walkways, cramped cycling paths, polluted environments through exhaust fumes and the extraction of resources and the escalating climate crisis. (Brand

the overthrow of colonial rule. Only re-embedding resulting from an alliance of social protection and emancipation can lead the way towards a post-capitalist future.

and Wissen 2017) Connecting this with the introduction on reasons and the TMSA, I argue that without this recognition action easily falls back to the unconscious reproduction of social structures instead of their emancipatory transformation. (Collier 1994, Joseph 2003, Bhaskar 2005) Therefore, this recognition is an important step that needs to take place in order for reasons to become causes of agency in a process of social change. Thereby, the first meaning of re-embedding also is inherently related to its second meaning of re-embedding as a counter-movement. Effectively, the first meaning provides a reason for the second meaning to take shape, which is best visible in the critiques articulated against automobility, mainstream sharing and consumerism, which I will present in the following section.

3 Critiques of automobility, mainstream sharing and consumerism

In this section I present critiques that were articulated by non-commercial carsharers during the interviews. My interview guide actually didn't contain a question asking for critiques on cars, automobility or any other thing. Nevertheless, many interviewees extensively criticized automobility, mainstream sharing and consumerism from multiple perspectives, most often in relation to their non-commercial carsharing practice as a positive counter-example. While I will go into non-commercial carsharing as positive counter-example to automobility in the following section, I will now discuss the critiques of automobility, commercial carsharing and consumerism made by the carsharers. Only the first of these is directly related to automobility, while the other two are in close relation to it. However at the end they should be regarded as a "*total critique which argues that the specific problems engendered are contained inherently within automobility's logic,*" (Paterson 2007, p. 58) providing an important bridge from recognizing ecological embeddedness to the active realization of a counter-movement against the dis-embedding tendencies of the system of automobility and capitalist mobilities.

3.1 Two critiques of automobility

Already in the preceding chapter on reconstituting automobility and in the previous section on the environmental reasons for practicing carsharing it became visible that many carsharers are critical of automobility also beyond its negative environmental impacts. Now I want to make these critiques of automobility explicit. Apart from the ecological critique of the car and the recognition of the coercive aspects of automobility, non-commercial carsharers articulated two further critiques. The first critique of automobility takes its departure from the perception of the car as an object of utility and the low car usage amongst many carsharing members and extends it into a more general critique of car usage. The second critique targets automobility and the car as anti-social and "*disintegrating our social fabric.*" (Ivan)

Karl described to me that the people founding the association in Vaterstetten were "*critical of the car anyways,*" (Karl, Vaterstetten) regarded the car as object of utility and were openly questioning if one actually needs a car. Thence already from the start the carsharing associations were critical towards the car and

automobility. This critical attitude is still well alive amongst many non-commercial carsharers, although voiced more directly by the association members. This critical attitude is articulated especially in relation to how car usage of other people is perceived. Elmar told me in great length that he thinks that people buy a car for a usage that doesn't match their actual usage. According to him people buy a car for the "*extreme usage*" (Elmar, Grafing) of the yearly vacation trip where they want to drive one thousand kilometers without fueling and need space for three kids, while it is also supposed to look nice, resulting in the purchase of big and heavy cars. However, in everyday life *"95% of the time, they drive three kilometers for shopping, alone, right. So, no SUV, no big trunk, also no range, average trip distance below 20 kilometers."* (Elmar, Grafing) He became more drastic in his critique when arguing against driving alone, where one and a half ton of car is used to transport 90 kilograms: "*The ratio then is 5% meat and 95% bulk. This is deadly.*" (Elmar, Grafing) And while he acknowledges the convenience of being able to access a personal car at any time he doesn't consider it rational in relation to the costs associated to private car ownership: "*For the convenience of always having it, I pay 2500€ per year. Are people that stupid?*" (Elmar, Grafing)

The perception of automobility as irrational was common during my interviews. A while ago Nancy witnessed how a woman in an expensive car drove around her neighborhood in the middle of the road, because she was apparently afraid of scratching the car. While Nancy was waiting behind her at a crossing, three other cars were blocking the crossing because they were not able to pass the woman and her expensive car for turning into the street. Laughing over this bizarre and irrational image and having her own car loaded with second-hand furniture she was confirmed in her critique of automobility: *"[She] is just a stupid traffic obstruction. It just doesn't make sense. And we had the car full with furniture. […] That is what you have a car for: When you can't transport a cupboard with a cargo bike."* (Mountain Hut) Similarly, Hannah told me that she doesn't understand how many of her customers continue to visit her by car, when they repeatedly can't find a parking space and arrive late, albeit her office is directly at the suburban train station, causing outrage in her about the space cars are consuming: *"And then you walk through the city, everything full of metal. Columns of metal, what for? It is life-space that is blocked. I really hate this."* (Hannah, Grafing) With columns of metal she refers to both cars standing and driving around, which according to her both are not necessary due to the special, energetic and technological possibilities we have today with modern city planning and communication technologies: *"[Automobility] isn't keeping with the times anymore and there one also has to depart from habits and think them anew."* (Hannah, Grafing)

So again, the car standing around and not being used efficiently takes an important position in the critique of automobility. Bob thinks that *"most cars are bought into the garage."* (Bob, Grafing) Yet he actually is happy about it, because there is enough traffic already anyways:

"It is an atrocity for me, when I see how people drive here with the car on a Sunday morning. Some of them I know. And then I think…you get into the car, drive one and a half tons here for some bread rolls and drive them back…I can't see them anymore. And there are more cars all the time, the people…it must be the best thing on earth to be in a car in a traffic jam. […] Let's not blind ourselves. It is a catastrophe."
(Bob, Grafing)

Figure 5.1: The town center of Grafing. The catastrophe of automobility. Source: Author.

Thence, the first critique of automobility voiced by the carsharers is very much centered on the everyday usage of the car and its spatial and environmental inefficiency for the individual transport of people.

Yet the carsharers widen the critique of inefficiency of the individual car to the systemic level of car usage and ownership, where the combined effects of individual car consumption lead to the 'catastrophe' of automobility. Therefore, the second critique of automobility targets the car and automobility from a social and societal perspective. I already quoted Ivan, saying that the car is disintegrating the social fabric, which means to him that the car is detrimental to social life and society in general. He frequently refers to Illich who argued that individual movement of people beyond the speed of the bicycle is increasing inequality and alienates humans (Illich 1974) and to Hermann Knoflacher and his conceptualization of the car as a virus (Knoflacher 2009): "*I have the opinion, that if I catapult myself through space with borrowed energy, I lose part of my human properties or of my social capabilities.*" (Ivan) He describes the streets of his city as "*ethnically cleansed and there is only one creature left: the car.*" (Ivan) There one can only recognize neighbors by the initials on their number plate, because they don't leave the house without their car and where kids are not allowed on dangerous streets but have to spend their energy on vertical movement on omnipresent trampolines. He furthermore describes automobility as a radical monopoly, because in order to

participate in society or to find a job one very often is forced to own and use a car on an everyday basis. This results in "*a downward spiral. The old town is dying, because everybody is going to the Aldi in the outskirts or with the Porsche Cayenne Hybrid to the 'Denn's' organic supermarket.*" (Ivan) While Ivan was one of the few articulating this critique that clearly and all-encompassing, other carsharers mentioned aspects of this. For example, Hannah said that through the normalized use of the car, the everyday culture of shopping in the neighborhood is getting lost: *"In Grafing, the older people are buying a small bag of something and come with their huge car. Why? You could walk that! Then you meet people, then you can see, smell and hear. Something got lost there I think, also in relation to culture, living culture and everyday culture."* (Hannah, Grafing) Automobility and the related car-centered land-use planning are thereby fostering the disintegration of neighborhood connections and networks. (Tyler 2004, Newman and Kenworthy 2015) Lastly, Karl described the car and automobility "*from its essence as structurally anti-social.*" (Karl, Vaterstetten) He experienced many times that many people, including himself, become angry and furious with road-rage once they get behind the windshield and rant about cyclists even if they cycle themselves frequently. (Miller 2001a, Sheller 2004) This happens, because of the material set-up of the car as a delineated and exclusive space: *"The car confines. The car isn't communicative, at best showing the middle finger to the other or honking. That is all the social there is about driving a car. There everybody is a lone fighter more or less."* (Karl, Vaterstetten) Even more, Karl thinks that many people chose the car as a mode of transport particularly to not get into direct contact and conflict with other people as one could in public transport, which "*is the exact opposite of social.*" (Karl, Vaterstetten)

3.2 Critique of mainstream sharing

With the following critiques of commercial carsharing I depart from direct critiques of automobility, however, commercial carsharing is closely associated with automobility as it is mainly perceived as not solving the problems associated with automobility. Commercial carsharing doesn't allow the full replacement of the personal car, whereby automobility isn't challenged but rather supported. Therefore a critique of commercial sharing also needs to be understood as a critique of automobility. The critiques of commercial carsharing were manifold and I am not able to cover them completely. Yet, I will first briefly present a general critique of commercial carsharing and then elaborate on one example that was given by many of the carsharers: *DriveNow*.

Generally, the carsharers I spoke with, were rather critical about commercial carsharing. One of my interview questions was if they would opt for another form of carsharing if possible and many said they wouldn't, because commercial carsharing isn't personal enough for them. Furthermore, the critique of commercial carsharing was targeted at the pressure to create a monetary benefit for the carsharing company. This was often voiced implicitly when emphasizing the non-profit nature of non-commercial

carsharing: "*I like that it is an association, something not-for-profit. No provider is earning money with it, and that I think is really good.*" (Ulrike, Grafing) But some carsharers also made this critique explicit:

> "*Well…a commercial model is commercial. They have some owners who want money. They want a return, they want to see a return on investment and that is why it is less personal, not steerable, you nearly don't have any influence when you participate and of course it is much more expensive.*" (Antonio, Markt Schwaben)

Obviously, Antonio's critique of commercial carsharing is much broader than just the monetary benefit for the providers, however he sees the profit creation as the core of the problem. The incentive of making money is making carsharing primarily into an investment and only secondarily into the provision of shared cars. (Martin 2016) The ownership relations entrenched in private profit creation, make it impossible for the users of the cars to have any say in how the carsharing offer is designed, e.g. where a new car should be placed, what kind of car should be bought. Commercial carsharing therefore is actually less democratic than non-commercial carsharing, where the member assembly has the biggest power. Last but not least, profit creation simply makes carsharing more expensive. The critique of commercial carsharing also expanded to the ridesharing service *Uber*. Judith told me that her daughter is always complaining that *Uber* isn't operating in Munich.[19] Judith, however, doesn't like *Uber* because of the working conditions of the drivers, the competition with traditional taxi services and the uncertain environmental benefits of it. (Tcholakian 2017, Fleming *et al.* 2019, Rosenblat 2019) And also Ivan was raging about *Uber*. He is put off by what the industry makes of sharing: "*An electric Uber ride and then it is painted green or whatever. Green-Uber…for me that is #zombification…the empire strikes back subtly.*" (Ivan) As I have already written above, Ivan thinks that at the beginning of sharing should stand the thought of sufficiency. What he refers to as zombification is the misuse of something that was geared towards sufficiency as something geared towards profit maximization. His remark of the empire striking back subtly, besides being a smart reference on *Star Wars* and critical theory, resembles the argument made in critical literature about the sharing economy: the marketization of sharing leads to a co-option into profit maximization thwarting any positive social or ecological impacts. (Martin 2016, Murillo *et al.* 2017) Briefly summed up, commercial carsharing and commercial sharing more general are perceived as a kind of potentially undemocratic greenwashing which doesn't have the same environmental and social benefits due to the pressure to create profit.

This general critique was articulated and extended in concrete examples, e.g. the already mentioned *Uber*, *Airbnb*, but also small-scale electric rural carsharing and free-floating carsharing. I will just elaborate on one of these, *DriveNow* as example of free-floating carsharing, as this was the most common reference point for critique. Karl was one of the people who voiced a strong and detailed critique of *DriveNow*. In short

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[19] As a matter of fact, this isn't accurate, as Munich is one of the few cities where Uber has been operating in Germany without interruption. For the sake of Judith's argument this doesn't make a difference though.

it could be summarized as: *DriveNow* isn't able to replace the personal car. First, *DriveNow* is only available to a relatively small amount people, as it is only offered in central areas of big cities. Second, where *DriveNow* is offered the public transport network is well developed, wherefore driving by car shouldn't be an option anyways. Third, the goal of the current providers of free-floating carsharing isn't to replace personal cars but *"they want, that people drive with their cars and then buy those cars later and not that the number of cars is becoming less."* (Karl, Vaterstetten) Therefore albeit, free-floating carsharing is called carsharing, Karl insists that not everything that is called carsharing is also 'real' carsharing in the sense of allowing the reduction of the number of privately owned cars and kilometers driven. Others follow a similar line of critique, for example Elmar who generally thinks that carsharing in the city, especially free-floating, is stupid, because the distances are actually small enough for cycling and the public transport network is well developed: *"DriveNow and such is nonsense, because the average…they drive four kilometers. The people are so lazy, that instead of having to change once with the suburban train or the subway […] they prefer to take a BMW. […] This is a transport-political mortal sin."* (Elmar, Grafing)

Also Walter criticizes *DriveNow* for not being able to replace the personal. His main explanation is that *DriveNow* isn't able to provide a reliable source of car access. First, it isn't possible to pre-book a car with *DriveNow*. Therefore, one has to rely on being able to find a car nearby at the time when one needs it and it frequently happened to him that he didn't find one. Second, during high-demand times *DriveNow* is even less reliable, as even more cars are used and it is difficult to find one that is close. Third, free-floating carsharing cannot cater the different kind of car needs as there is only a quite limited selection of cars which furthermore isn't adapted to needs such as the transport of bulky things. Fourth, because of having to search for a car, the time benefit he got through using *DriveNow* instead of public transport frequently got lost and he also had to pay three times the price for the trip. Fifth, *DriveNow* doesn't enable to get into the daily grind characteristic of everyday mobility. Thence, the unreliability of *DriveNow* isn't compatible with how he plans his everyday life. He wants to be able to rely on the availability of a car as he could with his private carsharing arrangement and as he can now with StattAuto:

> *"I never have to think if it works, it just works. Like that I can rely on it. If I booked a car on the weekend, I don't have to hope that hopefully a car is free, but go into the app and book it for the weekend and the car is there. With DriveNow I never know, if I get a cabriole, or another car or no car at all. That is only for fun."* (Walter)

DriveNow only serving for fun was also criticized by Robert, and resonates with the perception of the car as object of utility. Robert thinks *DriveNow* is useless and just for fun, because you can't get a 9-seater or a car to transport furniture: *"With a Mini you can't really do anything. It is more a fun-car."* (Robert, Markt Schwaben) Thence, *DriveNow* as an example for free-floating carsharing, wasn't perceived as being able to replace the personal car, because it doesn't provide a wide-enough variety of cars, is too expensive for regular

use, doesn't save time because of the trip to the vehicle and isn't a reliable source of access to a car. Additionally commercial carsharing in cities, particularly free-floating carsharing, was perceived as a competition to public transport and non-motorized forms of transportation: "*It doesn't necessarily replace the car, but it is something additional, that rather replaces public transport in many cases or cycling or walking. I think the ecological benefit is not as big as with our model.*" (Camper)

To summarize this subsection, commercial carsharing is criticized as not only environmentally and socially inferior to non-commercial carsharing because of its competition to public transport, cycling and walking and its undemocratic decision structure aimed at profit creation. But additionally and particularly free-floating carsharing is seen as not challenging automobility substantially by not reducing car ownership and car usage because of its unreliable access to a car and the impracticality of the available cars. Thereby the critiques of commercial carsharing on one side are a critique of automobility because commercial carsharing doesn't break with the system of automobility. On the other side, in doing so the carsharers also criticize the urge for profit creation inherent within commercial undertakings and thereby launch a broader critique of consumerism and capitalist society.

3.3 Critique of consumerism and capitalist society

In this subsection I will present these broader critiques of consumerism and capitalist society. The origins for these critiques were manifold, yet often emerged in relation to automobility. Simone for example told me, that since she doesn't own a personal car anymore and only takes the train for long-distance trips, she is taking less luggage with her and pays attention that she is able to wash clothes in case she is gone for a longer period. Interestingly she relates this behavior to car owners who "*always pack way too much. They don't need all that. But they need their possessions, they have to bring them for all eventualities. […] Car ownership is also a lot of equipment.*" (Simone, Freising) Thence, owning a car, itself an immense act of consumption is followed by more consumption, which then leads to people bringing a lot of stuff with them, that at the end they don't need. Simone on one side relates this critique to her personal travel behavior but also hints at broader structural problems by saying that car ownership and automobility are part of the problem of consumerism. (Paterson 2007) Through targeting broader structural problems the critiques of consumerism become less attached to the individual car and more to automobility. Hannah, whom I already quoted saying that automobility destroys everyday culture of shopping in the neighborhood through big shopping centers specifically connects this to a critique of consumerism:

"*It only serves the comfortability of the masses, of mass consumption or the mass, how to say, turnover. And there are supermarkets in the villages, but those are dying, because there is no space for parking next to it. And then everybody has to drive out with their car to get their fodder [sic] and come back. That is crazy!*" (Hannah, Grafing)

For Hannah thus automobility and the spatial planning attached to it are fostering and supporting mass consumption, having all sorts of negative consequences for society and nature, which just "*isn't timely anymore*" (Hannah, Grafing) and needs to be overcome. Likewise, Raya thinks of private car ownership as part of an "*anachronistic consumer society,*" (Raya) which ought to be overcome with the help of more sharing, because "*so many things are lying around without being used and you rarely need them.*" (Raya) Thereby, Raya is generalizing her critique of consumption in relation to the car and automobility to an overall critique of consumerism.

Many other interviewees also made this generalization. I already quoted Martha for example saying that "*getting things you rarely use is stupid.*" (Martha) Similarly, in addition to the carsharing association, Mariarosa also is a member of the local exchange and trading system, in order to be able to share more things, e.g. a tent trailer she is owning. All of these activities are part of reducing her consumption following the attitude of "*not everybody has to own everything.*" (Mariarosa, Grafing) Clara made a similar remark when she was telling me how her parents reacted to her family not wanting to buy a car with their second kid: "*Why do we do without, if we can afford it? Then I said, if we would buy everything that we could afford, we wouldn't know what to do with it.*" (Clara, Vaterstetten) For Clara, not getting a car thus is a statement against consumerism in general and Erich certainly agrees with her when saying that "*we need to step back from [...] the feeling that we can afford everything endlessly on the back of others.*" (Erich, Grafing) Broadening the critique of consumerism even further towards the societal level is Elmar. In great length he told me about the problems he sees in society, which according to him is in a dead end, because people are not willing to have kids anymore. While one could debate about the truth behind this problem analysis, it is more interesting that he regards consumerism as the cause of this problem: "*Single households, thus DINKI, double income no kids, everything just because of consumption. If you look at it closely, everything is only because of consumption.*" (Elmar, Grafing) Elmar argues that society is missing social connection, because everything is mediated through and reduced to individual consumption, e.g. a big house, a large car. (Lefebvre 2014) Therefore, his proposed way out of this dead end are manifold neighborhood sharing initiatives like the carsharing association in Grafing. (Botsman and Rogers 2010) It is already becoming clear that in many cases non-commercial carsharing is proposed as part of improving the situation the critiques are targeting. As most critiques are at least related to negative effects of automobility or societal problems related to automobility by articulating and acting in accordance with those critiques are re-embedding automobility into its societal and environmental context and form a counter-movement against dis-embedding. (Polanyi 2001, Gibson-Graham *et al.* 2016)

Yet, before I go into this process in more detail I will briefly present the broadest critiques voiced by my interviewees against capitalist mobility and society: "*This thinking that everything is mine, mine, mine and even more mine. You can't get this out of peoples' heads here. That was different in the East [[(the former*

GDR)]." (Frigga, Markt Schwaben) As for Frigga, in quite some instances the critiques of capitalist mobility and society were closely connected to criticizing automobility, private car ownership and consumerism, yet rather implicit, e.g. by referring to a former communist state or through the question of 'What does one actually need?' Helen and Mimi are two good examples for the second case. Referring to the abundance of cars in the United States, Helen is convinced *"that not every family needs two cars."* (Helen, Grafing) While this is still a rather implicit critique of capitalist society, openly questioning the role model of automobility in consumer capitalism is nevertheless a critique asking for an alternative to capitalist mobility. (Pink 2012, Cohen and Hjalmarson 2018) A critique of capitalist mobility is also implicitly included by Mimi for whom sharing the camping van is part "*of thinking that it is important how it looks in the world. That not everybody has a car in front of their door."* (Camper) Making the critique included in asking 'what does one actually need?' more explicit is Murray. He thinks that people actually become aware of wanting to live in a different society, through asking this question. At some point people realize that they don't need many things, because they are paid for by environmental destruction and stress related to earning money to buy things in the first place. However, as Selma made clear in her interview, this realization is not taking place in a vacuum, but is part of a societal development and the reality of the climate crises:

> *"The hot summers, the snow storms, etc., all those reports, the flooding. It is becoming tangible for people now. Thereby, I think the whole topic [of climate crisis and sharing] is getting a completely different societal relevancy and is opening up, because you can't push it away anymore. […] And there mobility is of course a substantial lever."* (Selma)

Thence, asking 'what does one actually need?' in relation to automobility and the climate crises develops into questioning capitalist mobility based on individual car travel. (Steg 2016, Lesch and Kamphausen 2018) Some interviewees took this critique further to include overall capitalist society. During my interview with Judith we were talking about negative aspects of automobility. Mostly talking about her opposition towards the car as a status symbol, she briefly mentioned that also environmentally the car isn't good. Being particularly interested in this aspect I asked her to specify the environmental problems. However she responded that it is not only the environmental problems why the car is in demise:

> *"It is everything together. I have the opinion, that many people feel, that some time is ending, at this moment with this great capitalism…and that you could have everything for money and things like that. […] Yet, we Westerners still are convinced that our way of thinking and living and of dissipation and exploitation is the right way of living. And I am not of that opinion."* (Judith)

This appears like a far fetch by her. However, taking into consideration that automobility and the car have been the incarnation of capitalism and the Global North since the Second World War, it becomes more understandable how the problems incorporated in automobility, e.g. oil extraction, air pollution or the climate crisis are parallel problems of capitalist society. (Urry 2004, Marriott and Minio-Paluello 2013) Ivan

refers to the same connection, yet again from the perspective of consumerism and ownership: *"In the growth paradigm or in the expansive system and in the industrial system, the matter is pumped out at all ends […] and everybody should buy their own."* (Ivan) He told me this in relation to their experience that sharing the electric car with people outside of the group was easier when they requested a fee. His explanation of this is that capitalist society is teaching a mentality of having to own things and that sharing with other people always comes with the price of dependency: *"The commodification of everything. […] Before I have to interact with my neighbor, I prefer to buy my own [car]."* (Ivan) Thereby, sharing and willingly entering a dependency with other people becomes a statement against the hegemonic values of a consumerist and capitalist society.

In this section I presented different critiques articulated by non-commercial carsharers. First and most frequently automobility was strongly criticized in the interviews. In addition to the ecological critique inherent in the environmental reasons for practicing non-commercial carsharing, automobility was criticized on the grounds of irrational car use and disintegration of the social fabric. Second, grounded in this critique of automobility were arguments against mainstream (car)sharing, ranging from a general critique of the need for profit creation to a specific critique of free-floating carsharing not being able to replace the personal car. Lastly, I presented wider reaching critiques of consumerism and capitalist society, which also emerged from critiques of automobility and the car. Coming back to the topic of re-embedding it is visible how these critiques emerge from the basic recognition of automobility as something that is problematic on ecological and other grounds. (Gibson-Graham *et al.* 2016) Still, in one way or the other all of the very different critiques I just elaborated are related to aspects of automobility or connected to automobilities' position in capitalist society. Each of these critiques in themselves only point towards specific and isolated problems or partial solutions based on specific technologies or policy measures. But, following Paterson, I argue that

"when we put all of them together, they are more suggestive of a total critique which argues that the specific problems engendered are contained inherently within automobility's logic. Thus critiques and resistances tend towards counter-hegemony in their form of argument and action." (Paterson 2007, p. 58)

Henceforth, the critiques presented in this section have to be understood in their relation to and as complementing each other, forming a total critique of automobility as the contextualized basis for the carsharers agency and as the grounds on which the second meaning of re-embedding as counter-movement can emerge. Through building these critiques based on the recognition of automobility's interrelatedness with the environment the need for a counter-movement against dis-embedding becomes clearly articulated. And many people I interviewed specifically positioned non-commercial carsharing as a potential alternative to automobility and private car ownership, whereby non-commercial carsharing must ultimately be understood as a counter-movement and an inherently counter-hegemonic practice. (Buechler 2000, Paterson 2007, Dowling and Simpson 2013, García-López *et al.* 2017)

Certainly, automobility isn't re-embedded completely and in its entirety. Nevertheless, this process of ecological contextualization, as partial it may be, in connection with the manifold critiques turns into a counter-movement and results in non-commercial carsharers following the ambition to change the mobility system as a whole. In this discussion, I therefore first present the visions carsharers have of and for non-commercial carsharing, because this ambition to change mobility is particularly present in these. In connection with the ecological reasons for carsharing and the total critique of automobility this ambition for a transition of the entire mobility system is the last piece in firmly establishing non-commercial carsharing as counter-hegemonic practice.

Non-commercial carsharing as vision of an alternative to automobility

In its most simple form changing mobility through carsharing was articulated through the wish to spread carsharing further and thereby make the world a better place: *"I would wish that there are more users. Much less standing traffic, because the cars are mainly standing around and much more quality of life and life space for pedestrians and cyclists. So that is the long-term goal, a bit of improving and changing the world."* (Simone, Freising) Ivan focuses more on changing his own mobility through private carsharing as it allows him a meaningful use of the car according to his personal ambitions on mobility sufficiency and provides him with "*a good feeling.*" (Ivan) On one side, he wants to move slower and abstain from coercive high-speed forms of movement, such as planes, high-speed trains and highways, mostly using his own bodily energy for movement. Sharing an electric car that only drives up to 100 km/h and isn't available all the time as other people also use it fits into this personal ambition quite well. The shared car thus facilitates achieving his self-limitation in relation to movement and energy consumption. On the other side, he connects his private carsharing arrangement to a broader vision of making himself independent from national and international systems of exploitation and control, like the oil industry and state bureaucracy, thereby gaining independence from the virus car: (Knoflacher 2009)

"Well, I think nobody likes to fuel a car. Or nobody likes to go to the TüV. Nobody likes to pay taxes for a car. […] I think that you make yourself independent from the whole car system to a certain extent, when it is about sharing a car. […] You have the feeling, that you again gain a certain autonomy or self-efficacy and are not completely infected from the 'virus car'." (Ivan)

Ivan essentially sees his carsharing as the result of an intellectual learning process, which he would like others to also go through. Thereby what he describes on an individual level would also become relevant for the societal level, which became particularly clear while I was talking with Walter. He is convinced that carsharing is going to change how society moves. I already talked extensively about Walter's perception of the car as creating a vicious circle and coercing people into constant usage, actually taking their freedom to choose the appropriate mode of transport. Carsharing, be it privately or through *StattAuto*, thus in principle

is able to break this vicious circle of automobility and gets people to use other modes of transport, without completely withdrawing them from the beneficial aspects of automobility, such as flexibility. (Dowling *et al.* 2018) An additional element that Walter sees as beneficial for carsharing is the advance in technology. While he heavily criticizes *DriveNow* for not being able to replace a personal car, the technological developments behind it can also make stationary carsharing easier to use. Thence, together the older idea of carsharing and technological developments foster breaking the vicious circle of car dependence and thereby support a move away from automobility towards a mobility system based on cycling, public transport and shared vehicles. (Dennis and Urry 2009, Canzler and Knie 2016, Nehrke 2016)

The ambition of shifting the mobility system away from automobility through carsharing is rather implicit in Simone's, Ivan's and Walter's statements, yet this ambition was made an explicit goal of carsharing by many other carsharers and the boards of the associations:

"We want to change mobility. We don't want that people drive as much with our car as they do with another one. We also don't want, that people drive a lot with our cars. […] Of course we want to gain many members who also then drive more, but we don't want that the individual drives a lot." (Karl, Vaterstetten)

Karl doesn't see carsharing as a goal in itself, but rather as a tool to change how people move in their everyday life. Karl's goal for the association is not that everybody does carsharing, but that there is no need for private cars anymore. Carsharing thence is a facilitator for this carless future as it gets people used to living without a privately owned, always accessible car, but with shared vehicles, cycling and public transport: *"Carsharing isn't the goal. It is the way."* (Karl, Vaterstetten) Also Elmar, Murray and Jean-Paul share this idea of carsharing being a step in between automobility and future mobility systems. For the three of them this future mobility system is associated with shared autonomous vehicles. For Elmar thence carsharing has a strategic element to prepare people for the shared use of vehicles: *"You have to see the strategic goal, because I am against only carsharing, forget it. But the solution at the end is complete sharing, not only the tools or the vehicles but also the rides."* (Elmar, Grafing) Carsharing for him is the "*light-version*" (Elmar, Grafing) of a future with shared autonomous vehicles, where nobody is alone in a car anymore. Murray shares this vision and also thinks that carsharing teaches people that they don't need the car itself, but its service and use-value of movement. Therefore carsharing is ideal to prepare people for a *"networked mobility based on algorithms which probably solve [movement] perfectly."* (Murray, Erding) While certainly the credibility, likelihood and benefits of this techno-vision of mobility can be questioned and criticized, (Pink *et al.* 2018, Bissell *et al.* 2020) it nevertheless expresses an ambition to shift mobility as it is today towards a more collective and supposedly environmentally friendly system because *"something has to change. It can't continue like it is at the moment."* (Murray, Erding) For Murray this means that carsharing fits into today's society because many people have a wish for things to change whereby carsharing provides a window of

opportunity to move towards a different kind of mobility. Slightly differently, Jean-Paul doesn't regard carsharing as a tool for getting people used to a different kind of mobility but thinks that carsharing is a tool to already improve mobility today, because it already works and doesn't depend on uncertain technological developments: *"I honestly don't see autonomous driving arriving soon, even if it is told like that. But at least carsharing would increase the efficiency of the vehicles, that they drive more and there overall are less vehicles driving around. […] Carsharing is an approach that already works."* (Jean-Paul, Grasbrunn)

Likewise, Hannah thinks that through spreading carsharing *"there could be some kind of revolution. This now was the age of the car and now comes the age of networked mobility or something, right? […] Because the future is a sophisticated system of borrowing, not owning oneself, of different modes of transport in combination."* (Hannah, Grafing) Thus again, carsharing is kind of a lever for changing the entire mobility system as theoretically elaborated in the introduction to this work. (Harvey 2006, chap. 12) The most concrete articulation of this vision was made by Georg: *"I just thought that, with these cars…it would be great if everything is carsharing. There is standing a car and you just get in and start driving."* (Family Schmidt, Anzing) After he further explained his vision I asked if that would mean that nobody has a car anymore but everybody instead, to which he replied:

Georg: *"Yes, that would of course be great. But that doesn't work, because that is…"*

Christa: *"But if you are allowed to dream…"*

Georg: *"Communism or something, right? Pure socialism."*

Christa: *"Also didn't really work…"* (Family Schmidt, Anzing)

Multiple things are interesting in this short dialogue, independent from the truth of its content. First, carsharing gets attached to a tendency towards collectivization and communitarianism. (Bookchin 2015b) Second, this vision of a collective mobility system is seen as a dream and something that probably isn't going to work. Third, they nevertheless have this vision and actively work towards it through starting a carsharing association in Anzing. Thence, non-commercial carsharing seems to offer a 'real utopia' (Wright 2010) on one side. On the other side, implicit in this statement is that by connecting carsharing with an inherent tendency towards an alternative organization of society it becomes positioned as an inherently counter-hegemonic practice.

Showing that it works: Non-commercial carsharing as counter-hegemonic practice

As in the statement above the counter-hegemonic character of non-commercial carsharing often remains implicit and hidden. Selma, Walter and Henri are further examples for this. For Selma the private carsharing arrangement provides a concrete example to other people of how living a good life without a personal car is possible. It is especially convincing as she is not communicating it as a political, strategic or monetary project, but simply shows that it is possible so *"that people see: 'Hey it works!' It works, it functions and it is simply a matter of adjustment."* (Selma) And albeit she is aware that when she gives up some things, it might not

make a big difference after all, she thinks that *"when everybody says that nothing will happen."* (Selma) For Selma private carsharing is a way of providing a good example, yet without emphasizing, expressing or making its counter-hegemonic character explicit to others. Similarly, Walter thinks that the best way for changing people's mobility behavior is to tell them about the possibilities of carsharing: *"When I can convincingly demonstrate, that for many years I found a model, in which I don't need a [personal] car and aren't less flexible, then there will be more and more people who say after an accident: 'Do I really need a new car?' I am quite convinced that this will change."* (Walter) Thence, also Walter understands practicing carsharing as a way of showing that living without a personal car works well, without making its counter-hegemony explicit. Simply by communicating his positive experiences to other people the mobility system will move away from the hegemony of the private car. These two behaviors are mirrored by Henri for whom being a carsharer isn't a *"religious attitude or an exaggerated ecological attitude."* (Henri, Grafing) Environmental reasons and concerns about and opposition to automobility are part of why he practices carsharing, but he repeatedly made clear that his decision to get rid of his car was completely unideological and practical, because carsharing just works well. As the other two, he thereby also hides the counter-hegemonic character of carsharing. I can only assume why they do this, but I think they want to avoid to appear ideological in their decision for practicing carsharing in order to be more convincing to others who might not have the same interest in environmental protection or opposition to automobility. Hiding the counter-hegemonic character of non-commercial carsharing might thus serve the strategic reason of spreading carsharing subversively into everyday life as some kind of 'Trojan Horse.' (Pieterse 2008, Pink 2012, Goldstein 2017)

Many other carsharers however made the oppositional character of carsharing explicit. Antonio also thinks he provides a good example to others and shows how sharing contributes to a more environmentally friendly society. Yet, he also actively demands from others, that they follow his example, exposing the counter-hegemonic character of carsharing: "*I can't point at others and say: 'Hey you should do something more for the environment, consume less, do more for the environment, when I don't try it myself and show that it works."* (Antonio, Markt Schwaben) More explicitly, August and his wife are showing their kids that even if the camping van is old and doesn't belong to them alone, it still has a "*great use value."* (Camper) Thereby they are teaching their kids that *"consumer society can't continue like this and that you don't always need the newest of the new and that advertisement often creates needs that you otherwise wouldn't have. With the bus we live that."* (Camper) Thence, carsharing is consciously practiced in opposition to the hegemony of consumer society and automobility. As a matter of fact, this opposition is also comprehended by people August talks with about his private carsharing arrangement. According to him, people seem to feel decadent and have a bad conscience about owning a car when they realize that private carsharing works just fine. Thus although August, Ellen and Mimi don't claim their camping van sharing to be a counter-hegemonic

practice, its counter-hegemonic position becomes visible in relation to other peoples' practices of automobility.

Also David described such moments, for example when his colleagues and friends show incomprehension for his choice for carsharing albeit he could afford a personal car. Yet, he stands by his decision and is convinced by the ideological idea behind carsharing: *"Of course you can't use it all the time, but that is the basic idea of carsharing and for that you decide consciously."* (David, Königsbrunn) By communicating his conscious decision openly and also to people who think differently, he sees himself as some kind of multiplicator and ultimately thinks that this is also how change is taking place in society:

"I am convinced that tipping points in society always start with one person. Rethinking doesn't happen because of laws or subsidies, but it is the rethinking by individual people who carry this further and that's how it changes. Therefore carsharing is connected to society, because I can have an influence through it. It is difficult to measure, but attitudes and what I reflect with my behavior is really pivotal." (David, Königsbrunn)

I previously described how non-commercial carsharing for some is an articulation of environmental awareness and a conscious decision to reduce the personal environmental impact through car ownership and usage. In David's case this becomes even more explicit as a self-chosen and self-imposed constraint on car ownership and usage. And David isn't the only one who self-regulates his relation to automobility towards counter-hegemony. Ulrike and Clara are two further good examples. Ulrike books a car well in advance if she knows she really needs one at a certain point in time, because she made the experience that on short notice she sometimes can't get one and then can't do what she wanted. Yet when I asked her if she feels like she has to give up something she said: *"No. No, this is a voluntary abstention,"* (Ulrike, Grafing) and in case she can't get a car she just does something she doesn't need a car for. Similarly, Clara very often is confronted with other peoples' concerns that she is missing out on something. She then is always very quick in making clear that her use of carsharing is *"a self-chosen constraint."* (Clara, Vaterstetten) So even if she is abstaining from something it is her own choice in order to "*improve the world a little bit,"* (Clara, Vaterstetten) and raise her kids environmentally conscious through the first-hand experience that abstaining through sharing isn't a bad thing. All three, David, Ulrike and Clara realize the counter-hegemony of non-commercial carsharing through seeing it as the start of a new trend or a self-chosen constraint for improving the world, which becomes particularly explicit in relation to other people. Thence, non-commercial carsharing has an inherent tendency towards opposing hegemonic practices of automobility. While some carsharers try to not make this tendency explicit so that carsharing doesn't appear as an ideological project, but as a practical and rational choice. Other carsharers make the counter-hegemony explicit and show through their good example that, albeit it is an ideological project, non-commercial carsharing is a good thing for people and the planet.

Contextualization and counter-movement: Non-commercial carsharing and (everyday) resistance

In this chapter I started with arguing that reasons for practicing non-commercial carsharing go beyond economic rationality. Albeit the monetary benefits of carsharing do play an important role for most carsharers, the environmental benefits of carsharing were even more important, especially regarding space and resource consumption and genuine inefficiency of personally owned cars. Additionally, non-commercial carsharing is a way of articulating environmental awareness and ultimately provides a strong ecological critique of automobility, whereby automobility is ecologically contextualized. In the introduction to this chapter I argued that reasons need to be recognized as causes for agency, which emerge from a relationship of concern with the world. It is apparent that the carsharers give high importance to the environmental issues of automobility and don't regard them as fact-free, merely subjective preferences, but as 'fact-laden' values that are about things that matter to them and the outcome of reasoning based on everyday experience. (Sayer 2011) I come back to this argument, because without recognizing the causal power of reasoning, the two-fold process of re-embedding leading to counter-hegemonic practices can hardly be conceived on the level of individual agency.

The ecological contextualization is the first part and meaning of the process of re-embedding. (Giddens 1991b) In connection with further critiques of automobility, mainstream sharing and consumerism non-commercial carsharing develops into a total critique of automobility. (Polanyi 2001, Paterson 2007, Gibson-Graham *et al.* 2016) This total critique provides the basis for the second part and meaning of the process of re-embedding as counter-movement against dis-embedding and "*resistances to the unevenness and disempowerment.*" (Thorne 1996, p. 1362, see also Barham 1997) This counter-hegemony is particularly present in two aspects. First, the visions that carsharers have for and of non-commercial carsharing, in that it is going to change the mobility system away from the hegemony of automobility and the personal car. Second, non-commercial carsharing is practiced with the intention of providing a good example and showing that a life without a personal car works. Together, *"these everyday performances are precisely what prefigures and gives concrete meaning to the alternative commons senses that counter-hegemony requires."* (García-López *et al.* 2017, p. 103) Thereby, the case of non-commercial carsharing in this study is clearly positioned in the debate on the sharing economy on the side of emancipatory potential as one of the "*new types of communities that can handle local/global responsibilities and transform them into positive visions for both cities and regions.*" (Kesselring *et al.* 2020, p. 10)

Thus, non-commercial carsharing is influencing local change in the mobility system through re-embedding automobility. On one side, automobility is again connected to its ecological context, which thus plays an important role in decisions on car usage and ownership for the carsharers and thereby increases the environmental conscience of the carsharers, altering their relationship with nature. (Gibson-Graham *et al.* 2016, Steg 2016, Vetlesen 2016) On the other side, the hegemony of automobility is locally challenged

through the counter-movement of non-commercial carsharing. Thereby, I showed how re-embedding can provide a useful framework for investigating processes of change not only from a macro, but also on a micro perspective of redefining the political everyday. (Barham 1997)

Furthermore, non-commercial carsharing is entangled with the everyday powers of automobility through relating practices of automobility to previously unrelated and/or unrecognized ecological issues. (Doughty and Murray 2016) Thereby, non-commercial carsharing acts as counter-movement against dis-embedding and is a response to power from below by the people who are suffering from dis-embedding (space consumption, air pollution, climate crisis, resource depletion) and therefore organize a counter-movement of re-embedding automobility by sharing cars. (Henderson 2009) Thence, non-commercial carsharing contains an inherent tendency towards counter-hegemony based on a critique of the existing structures of domination of automobility and its common sense, thus revealing an intention to influence social change. (García-López *et al.* 2017, Goldstein 2017, Cohen and Hjalmarson 2018) Overall then, non-commercial carsharing emerges as a social action based on individual agency to overcome the environmental issues of the system of automobility and shows a tendency to contest and potentially resist capitalist mobilities in the realm of everyday life through criticizing and re-embedding hegemonic practices of automobility.

Chapter Six *"We do it together for us": Community, voluntary labor and collective identity*

In the third empirical chapter I want to focus on how non-commercial sharing connects functional and communal qualities through voluntary labor and shared rules, enabling the development of responsibility and trust and thereby the building, strengthening and maintaining of communities. Because the perception and role of community is quite different between the two forms of non-commercial carsharing I will discuss the associations and the private arrangements separately.

First and more extensively, I will discuss how building community is an integral part of the carsharing associations. In the interviews with members of the carsharing associations and at the informal meetings, the association spirit and the community of carsharers were a frequent topic and the association is frequently referred to as community. Furthermore, the organizational level is almost completely based on voluntary labor by the members, dealing with the day-to-day organization of the associations and sustaining the community character of the associations. Lastly, I will elaborate on current problems within the associations to retain the both/and of function and community due to the ongoing growth of the associations and how the continuous development of trust and responsibility are important to not develop into a mere carsharing service. Second, I will discuss the private sharing arrangements in which community building didn't play a major role due to already close social ties. In some cases the car was seen as a potential threat to the existing community, which led to extensive rules and regulation. In most cases, the existing community was strengthened, maintained and enacted through practicing non-commercial sharing. A shared car can thereby become a new group member, something like a group baby, a part of a friendship or a reason to lay aside family disputes.

Overall, I argue that practices of non-commercial carsharing build and maintain community through their configuration and a large amount of voluntary labor. Thereby a collective identity as 'carsharers' characterized by community, responsibility and voluntary engagement is established, working against individualizing tendencies of automobility and enabling the collective alteration of the reproduction of social structures through the individual by the emergence of collective agency.

1 Community and the impact of automobility

As previously, before I start with the empirical sections, I want to provide a theoretical framing for this chapter by briefly discussing the concept of community, its relationship to automobility and the argument of this chapter in relation to non-commercial carsharing and everyday resistance.

The development of community and its effects not only plays an important role in this chapter, but also forms part of my broader argument, wherefore I now discuss my understanding of community and its

implications. Somehow polemically, Zygmunt Bauman described community as a safe-space commonly understood "*as a 'warm' place, a cosy and comfortable place. It is like a roof under which we shelter in heavy rain, like a fireplace at which we warm our hands on a frosty day.*" (2001, p. 1) An ideal community is supposedly guided by the wish to improve life together, which however stands in contradiction with the really existing community that "*demands unconditional loyalty and treats everything short of such loyalty as an act of unforgiveable treason.*" (ibid., p. 4) For Bauman, community is essentially Janus-faced, in that there is an ideal type community that provides security from a hostile society, which however comes with the price of giving up individual freedom. He emphasizes this trade-off between freedom and security as a main reason why community has lost significance in modern capitalism and made way to an anti-communal worker-machine relation on the factory floor, essentially resulting in what Sennett refers to as the corrosion of character: "*Short-term capitalism threatens to corrode [the] character, particularly those qualities of character which bind human beings to one another and furnishes each with a sense of sustainable self.*" (Sennett 1998, p. 26f) These conditions of short-termness, flexibility and fragmentation make it increasingly difficult for community to emerge in a meaningful way: "*The bonds with the 'others in similar conditions' tend to be fragile and blatantly transient. Tying up and fixing human bonds takes time, and gains from looking to long prospects ahead. Today, however, togetherness tends to be short-term and devoid of prospect.*" (Bauman 2001, p. 85) However, against this bleak account of the contemporary world Bauman recalls the 'warm community' and its origin:

> "*There are tasks which each individual confronts but which cannot be tackled and dealt with individually. [...] We all need to gain control over the conditions under which we struggle with the challenges of life - but for most of us such control can be gained only collectively. Here, in the performance of such tasks, community is most missed; but here as well, for a change, lies community's chance to stop being missing. If there is to be a community in the world of the individuals, it can only be (and it needs to be) a community woven together from sharing and mutual care.*" (ibid., p. 149f)

Thence, according to Bauman, the trade-off between security and freedom through joining a community is worth and meaningful when it serves to re-appropriate the conditions of life through sharing and mutual care.

Yet, Bauman doesn't provide an actual definition of community, but rather the portrayal of two assumed ideal types and their development under current conditions. Therefore for a concept and definition of community I refer to Anthony Cohen (1985), who essentially sees community as a combination of symbols and meanings and as a relational idea of similarity within the group and difference to other groups. Differing from Bauman, who sees the community requiring foremost a common understanding, Cohen describes community as an aggregating device: "*It is a commonality of forms (ways of behaving) whose content (meanings) may vary considerably among its members.*" (Cohen 1985, p. 20f) Community then is something

that is actually self-prescribed by its members where *"the reality of community lies in its members' perception of the vitality of its culture. People construct community symbolically, making it a resource and repository of meaning, and a referent of their identity."* (ibid., p. 117) Thence, community doesn't depend on an actually shared understanding, but merely on the perception of a shared understanding, which can actually vary significantly across the individual, self-prescribed members of the community. Bringing these two perspectives on community together I understand community as a group of people who practice a specific culture along shared symbols with different meanings. (see also Maxwell 2012, chap. 2) It is these practices that build community, which then serve as individual and collective identity reference and provide resources and repositories to re-appropriate the conditions of life. (Buechler 2000, Wright 2019)

The building and emergence of community and collective identity around causes and goals is frequently taking place and particularly in relation to new social movements is kind of perceived as self-evident, albeit often interpreted through the lens of lifestyle instead of community. (Berking and Neckel 1990, Buechler 2000) However, in relation to transportation, specifically in the context of cars and the middle class of the Global North, communities with a collective identity are not at all taken for granted. Quite the opposite:

"Automobility serves to underscore the separation of individuals from each other, driving in their little private universes with no regard for the consequences of the actions in which they have the fundamental right to engage, just as they vote in their private worlds of liberal consumerist democracy." (Paterson 2007, p. 18)

This resembles Bauman's and Sennett's analysis of the demise of community in modern capitalism. Sennett sees the emphasis on flexibility in the work-life and its consequence in high mobility as an important cause for the corrosion of character (Sennett 1998, 2006) and also Bauman describes this development of high mobilities and their effect on community quite drastically: *"A breach in the protective walls of community became a foregone conclusion with the appearance of mechanical means of transportation."* (Bauman 2001, p. 13) Furthermore, Harvey claims that "*free individual mobility […] necessarily fragments and undermines the social cohesion of the family and the community."* (Harvey 2006, p. 383) Thence, what all these authors suggest is that the ongoing and constant increase in individual mobility mostly through automobility and the car is fostering the fragmentation of existing communities. (Conley and McLaren 2009b) This consequentially leads to people rather living as *"atomized recluses"* (Ja, Panik 2014, author's translation) instead of embedded in communities, secluding them from its individual and collective identity reference and the resources and repositories to re-appropriate the ever more commercialized conditions of life. As already outlined above, this atomization and fragmentation was caused to a great extent through the rise of the system of automobility "*that produced and necessitated individualized mobility based upon instantaneous time, fragmentation and coerced flexibility.*" (Urry 2004, p. 36)

Therefore, the core argument I want to bring forward in this chapter is that practices of non-commercial carsharing are working against atomization and fragmentation caused by automobility through building, strengthening and maintaining community, re-embedding automobility into its social context and providing collective identity and agency to re-appropriate the conditions of life, because *"to envisage an alternative democracy, […] entails thinking also in terms of alternative daily practices which might recognize and reinvigorate the senses of self which recognize obligations to others, communality and so on."* (Paterson 2007, p. 18, see also Sheller 2004, 2018)

2   Building community

I started this study with a very practical example of how community is built and maintained in the carsharing association in Markt Schwaben. Apart from the car-cleaning party Rosa and the board also organize the association's anniversary parties every five years and half-yearly regulars' table.

Figure 6.1: Car cleaning party in Markt Schwaben: Building community while cleaning cars. Source: Author.

At these events members can meet and talk but also show their driver's license, which is a yearly duty for all members. In all cases the duty – cleaning the cars or showing the driver's license – is connected with socializing and being together. Thereby the members can get to know each other, build up personal ties and exchange on topics in relation to the carsharing association: "*Once in a while we also do a regulars' table for the car wardens. Then they get together and can exchange how to do what the best."* (Rosa, Markt Schwaben) Markt Schwaben is one of the more active associations in this community building, however in all associations the community is an important part of sharing cars together: *"I think the communal, when you meet for the new years' meeting…I think many like that, not everybody, but that is a small plus. Or at least there are faces behind [the sharing. … We try] that people get to know each other and get to exchange."* (Simone, Freising)

This feeling of togetherness is an important aspect for many members. Especially in the founding period of many foundations, many early-on members told me about friendships and relationships that developed out of the carsharing associations. In the early years of the associations there were many activities, such as group trips, which built up social contacts and transported a feeling of community and solidarity:

"Simply the social contacts which [my kids] experienced through that. That you have a certain solidarity with each other also in other issues. That friendships can develop from it, from house sitting to helping with a move, and many other things. That you simply do something together. […] There is a potential from which you can develop something." (Clara, Vaterstetten)

In other associations the active community building is less developed. For example in the association in Grafing, the board is trying to organize a regulars' table for quite a while but hasn't been successful yet, due to time constraints within the board: "*Well, I am planning since forever now, that I invite the members to a regulars' table, but you have to manage that time-wise…*" (Mariarosa, Grafing)

In other interviews, I was told that unlike in a 'normal' association the carsharing association is only a legal construct in order to provide a legal person for the ownership of the cars: "*The association is first of all only a legal construct, that is only for…that is able to function as the owner of the cars. There is no association life in the usual sense.*" (Henri, Grafing) There is no expectation of or assumed need for an association life as there would be in a choir or a bowling club. As a consequence, people don't have to be '*Vereinsmeier*'[20] in order to become a member of the association, which is actually communicated positively because the functional character allows to benefit from the association without having to participate in the activities of the association: "*We are no Vereinsmeier. […] Besides our main activity and the pursuit of our goals [there are few activities]. Going to the beer garden once a month, because you know each other, doesn't exist.*" (Murray, Erding) Nevertheless, Murray adds that it is important that people meet and get to know each other, because it has a range of positive effects for the associations:

"That one at least meets once or twice a year. One time more casual and one time at the member assembly. […] It is an association and we are sharing cars together and we need to learn about the needs of the others. One person likes it clean, the other one doesn't care when the floor mat is dirty and there one has to find a middle ground somehow." (Murray, Erding)

This is how all the people in active organizational or founding roles explained the need for a sense of community. Through knowing the needs of the other members the association runs more smoothly and with less quarrels. So, on one side the building of community is seen as important for the association to run easily and build social contacts amongst the association members. On the other side, it is perceived as unnecessary

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[20] A German term for people who are exaggeratedly active in one or more associations and for whom the association therefore is an integral part of their identity. (Duden.de 2020)

because of the functional character of the association to own and share cars collectively, emphasizing community as an aggregation device. (Cohen 1985) Hence, these different perspectives are not an exclusionary either/or but a productive both/and as Karl explained to me in great detail:

"The association is the legal form that best expresses the community character of the undertaking. […] The association isn't owned by anybody. The surplus is not distributed. But the character gets…that is fundamental for us: We are doing this together for us – *this is represented by the association form in the easiest and best way."* (Karl, Vaterstetten, emphasis added)

Thus the association is a functional legal construct, which supports a community character and enables togetherness by the way it is legally constructed and practically enacted. Still, due to this tension community building is a fragile and continuous process that is actively fostered, just happens or remains underdeveloped. In the following two sections I will discuss this process of community building from the perspective of the association members and the organizational level of the associations.

2.1 Member perspectives: Purpose, community and social control

Both the functional and the communal aspect of the carsharing association are present amongst the members. Their reconciliation is expressed as organized purpose community, where community is built through social contacts, appreciative communication, micro-management and short-term voluntary engagement. This kind of community, however, comes with the issue of social control that is both perceived as problematic, but also as enabler of the functioning of the association.

Non-commercial carsharing as organized purpose community

For some members the functional aspect of the carsharing association, the service of using cars without owning them, was clearly central: *"Actually, we just see it as a good carsharing service. That's it. […] It is only about the conditions and about the thing itself, about the service."* (Jean-Paul, Grasbrunn) However, most members who emphasized the service of the association are rather ambivalent regarding their service orientation, as there always were some other advantages the association provides them:

"Well, I actually am: usage, car, great. Everything else is something I don't really care about. […] But somehow, […] I think it is nicer, that one could get to know each other, if one wants to and that everybody says 'Du'[21] and that you are always able to reach someone. […] This small town thing somehow." (Helen, Grafing)

So even when focusing solely on the service aspect of the association, there is more to it. For Jean-Paul it is the cheap prices and the release from having to care for a personal car and for Helen it is the coziness of

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[21] 'Du' is the second singular, 'you'. In German the second singular is usually used amongst people who know each other well, e.g. friends or good colleagues. Its usage therefore is a sign for the open, relaxed and casual atmosphere amongst the members of the carsharing association.

carsharing in a small town. These additional advantages, however, wouldn't exist if carsharing wouldn't be organized as an association, pointing towards a bigger significance of the carsharing association than as mere carsharing service.

This bigger significance for many members was captured in the term '*Zweckgemeinschaft'* or *"purpose community*". This perception of the association as a purpose community is based on the experience that there is no association life, but only a one-to-one relationship to the car: "*This is a functional association. It is different than in the choir […], because behind it is a one-to-one-relationship with the car."* (Maxim, Grafing) Other associations usually have the organization of an event or a competition as a common goal. Yet, the carsharing associations goal is to "*provide the same mobility with less cars,*" (Maxim, Grafing) which doesn't require an association life in the usual sense of regular gatherings for practicing and competing. The association deals with mainly functional questions taken care of by the board, where from his perspective the little bit of association life mainly takes place. Thus, the functional focus of the association goal, more mobility with less cars, allows membership in the association and benefiting from it, without being engaged or having frequent social contact: "*Probably you have to meet more often [than once a year] or something, but it is not the goal to bring my leisure time into this association."* (Family Schmidt, Anzing) This becomes particularly visible in a type of micro-management undertaken by individual members, where the car is booked with enough temporal distance to the previous user and longer than needed: "*Therefore there are few points of contact to the other association members as such. Already because of that it is difficult to establish [an association life]."* (David, Königsbrunn)

The meaning of the purposive and functional character was elaborated on in depth by Bob and I think his elaboration says something more general about the associations: *"It is not carried by sympathy, it is carried by the purpose. […] A purpose coalition is a stable thing. The common purpose, the common benefit of this system is visible for all, understandable for all, perceptible for all and that is why it works."* (Bob, Grafing) This depends on a community where everybody recognizes the validity of the purpose and agrees to follow rules to cater for the benefit of that purpose. Rules are the most important aspect of following and organizing around a common purpose: *"Our whole society actually only works because we follow rules, also unwritten rules, every day, albeit following these rules, doesn't necessarily give us an immediate benefit. […] And carsharing here is also like that."* (Bob, Grafing) While this is a rather broad statement, one has to see it in connection with his previous statement, on the stability of coalitions that share a purpose. Only in connecting a purpose with rules allows for an organized purpose that requires and enables a community to be formed around it. Therefore, the carsharing associations work, because everybody agrees on the benefits of its purpose and the rules it is secured by, which ultimately leads to a form of community, an "*organized purpose community.*" (Family Schuster, Königsbrunn)

And indeed, the carsharing associations formulated rules for the communal use of the cars, albeit not without frictions in their implementation. Many members referred to the basic rule as 'Leave it as you found it'. First this means, that one should leave the car at the same spot where one picked it up, due to the fixed location for each car. Second, one shouldn't return the car dirty, which actually creates quite some frictions between the members: "*I would say, one problem is the normal community living problem. For the one person the car is still completely clean and for the other one it already is completely dirty.*" (Antonio, Markt Schwaben) The cleaning parties were an attempt to establish a rule that helps to tackle this problem, but "*it then is…the normal thing…some are there, they are participating in the community life and at some point have the need: 'Now it is my turn'. And others don't care, they just use it, put it back and 'After me, the deluge.'*" (Antonio, Markt Schwaben) The cleaning of the cars is such a strongly debated topic that some members even prefer cleaning a car they found dirty, instead of being accused to have caused the dirt: "*I myself, when I find a car dirty, I clean a little bit afterwards, because I don't want to be the one…well I don't want to come under suspicion, that I left it dirty.*" (Bob, Grafing)

Other frictions are caused through not fueling the car properly, the radio being turned on too loud, the car seat being in the wrong position, the seat covers being removed or the (non)-use of the windshield coverage. Most members can also tell a story about the one time they wanted to pick up a car and it wasn't there, either because the previous user was late or someone took the wrong car by mistake: "*You have to go to the car at four in the morning, because you are driving somewhere and then you realize the car isn't there. Then you are a bit angry and then it turns out some other slowpoke mixed up the day. Then they are obviously getting a nice hello.*" (Erich, Grafing)

Erich referred to these small frictions as 'menscheln', which is a German term to describe situations when human weaknesses are becoming apparent. And also most other members saw these frictions as problematic in some sense, but also as something that is normal and unavoidable to a certain extent, when so many people are collaborating with each other. In the vast majority of uses there are no problems and in case there occur problems the communication tends to be in a collegial tone. Additionally, the members together with the board try to find options for improvement through some measures, like free kilometers for cleaning, more social activities or a member assembly: "*And when there is some sort of creaking somewhere, then you just have to sit together, then you have to call in an assembly.*" (Family Schmidt, Anzing)

Summing up, while some members solely focus on the service the association provides to them, most members actually understood the carsharing associations as an organized purpose community, that doesn't require social activities. Rather it is a form of community that organizes around a shared purpose and gives itself rules in order to find solutions to problems that occur while reaching their common goal. Thus, finding solutions together for the common cause of carsharing in its consequence is what enables for a deeper sense of community in terms of togetherness and solidarity to develop:

"It is, also when you don't meet all the time for a regulars' table, a community. Everybody has…well you have something in your mind why you do it and then people get together who have the same goal. […] And [carsharing] I think is an idea that connects people in a certain way and I think it is a solidarity community somehow." (Family Schuster, Königsbrunn)

Non-commercial carsharing as community

This communal aspect of the association is developed by a distinct 'we-feeling' amongst the members of the carsharing associations through social contacts, appreciative communication, micro-management amongst the members and short-term engagement in the association.

Many members gained social contacts while being part of the carsharing association. Antonio for example told me that over the years he got to know many of the members also on a more personal level and regularly meets them in Markt Schwaben, either planned or by coincidence: *"Some quite nice people with whom I sometimes go for a beer, but outside the association context. […] You meet in the village quite often. When I go shopping on Saturdays, I meet at least two or three people that I know through the association."* (Antonio, Markt Schwaben) During the car cleaning party Robert opined that many people don't get the social aspect of carsharing and later he explained to me what he meant with that:

"What carsharing did, was that we gained foot in Markt Schwaben. We got to know people through that, not only two, but really made quite some contacts. […] Especially when you don't have your own car and are dependent on it and then also participate completely, then it has something social. […] You just somehow get together through that." (Robert, Markt Schwaben)

So far my examples came from Markt Schwaben, where these social contacts were also more prominent than in other associations, which has to do with their active efforts in community building through shared activities. But Markt Schwaben isn't the only association where social contacts developed and shared activities are planned and take place: *"Well, they once in a while invited for kind of a regulars' table. […] That I actually liked, because I only moved here five years ago and don't know anybody here."* (Ulrike, Grafing) However many of the members in Grafing that I spoke with either didn't want, for example Helen, or couldn't attend the shared activities: *"Well, there are [these shared activities], but I so far didn't participate. […] I considered it multiple times, because you would then meet people from the village, but I didn't make use of that so far, I have to say."* (Hannah, Grafing)

Another aspect of community building from the members' perspective is the appreciative communication within the association. Ulrike told me that at the beginning she was unsure about bookings she made and if everything is alright with the car. Therefore, she found it quite comforting, that she never had the feeling to ask stupid questions and that everybody always replied very nicely: *"What I found really comforting, […] I always got really nice replies, no matter whom I was talking to. […] You never had the feeling*

that you are annoying." (Ulrike, Grafing) Also when there are problems within the association the communication is mostly "*trusting and not loaded with stress or something.*" (Antonio, Markt Schwaben) I only learned about one case in which a member was late in bringing the car back and then was rudely attacked on the e-mail list: "*Normally nobody wants a car on a Sunday evening. But just at this point, somebody wanted it and was really angry and in the e-mail list, so in front of everybody, he let out his frustration and also quoted from my apologizing e-mail. That really hurt me.*" (Anonymous member) This lead to the member taking a break from the carsharing association, when he/she had the opportunity to get a used car, emphasizing the importance of an appreciative atmosphere for successfully building a community.

The third aspect of community building are practices of micro-management amongst the members, which are supported by the availability of the contact data of every association member on the booking platform: "*Well you have a member list and there are e-mail addresses or contact data or the phone numbers included and then you can call or write an e-mail [to every member].*" (Ulrike, Grafing) These practices take place in relation to the usage of the cars, but also in the coordination of the shared public transport passes, that many associations also incorporate in the association: "*I have also been called and was asked: 'Look you booked the MVV-card before me, but I really need it back on time. Are you going to be back on time?'*" (Ulrike, Grafing) Another common practice in relation to the transport passes is the reimbursement of ticket fees in case one forgot to put the card back. This occurs regularly, without it becoming a bigger problem, because on one side the members tend to nice about such inadvertencies and on the other side the ones who forgot to put the ticket back apologize: "*We had it once, that somebody didn't bring back the transport pass on time. [...] And then she came on the second Christmas holiday, not only with the money, but also with a bag of cookies and apologized.*" (Clara, Vaterstetten)

Mostly, the micro-management takes place in relation to the (re)booking of cars. I previously introduced booking the cars with a time-gap to other members as a form of micro-management, which happens on an individual level. Most practices of micro-management, however, happen through the interaction between members. One example of cooperative micro-management is to 'dig out a car':

"*In the [sic] carsharing you then have your better acquaintances, which you can call, in the case you spontaneously need a car for a few days. [...] Then you say: 'Could you dig out the car for me?' Digging out means to call members, who booked in that period and ask if they could rebook to a different car.*" (Henri, Grafing)

Henri described this practice as a favor when a fellow member has an urgency, however 'digging out' can also happen when a car is needed for a longer period of time, but no car is available for that long: "*Once I asked if someone could use a different car for a time window of one and a half hours, so that I can take the car for the whole day. And they were really friendly and did it immediately.*" (Hannah, Grafing) This possibility results from the open booking platform where every member can see who booked the car for how long and

even change the booking of every other member: *"When I now have a problem, I arrive an hour late, but the car is booked, I can call the person who booked after me and ask if they can rebook somehow or can somehow deal with the fact that I am an hour late."* (Rosa, Markt Schwaben) It thereby allows for more flexibility, reduces work for the organizers, reduces frictions between the members, but also depends on knowing each other and a feeling of community: *"When I don't know the person who is next, the barrier to call them is very high. But if I know: Yes, it is that person, they are always quite nice, let me just ask. They can also say that it doesn't work. […] Like that many things are solved easily."* (Rosa, Markt Schwaben) Another option for micro-management in the booking system is the option for booking a *'Wunschauto'* (requested car), which means that a member wanted to have a car, but none was available. This helps in identifying latent demand and where a new car could be needed, but unfortunately it is rarely used by the members: *"It is a little bit cumbersome, and is also never filled out, that we have to notice. The same for the idea, where do I drive, the route, destination and travelled route would be ideal [to put in the booking]."* (Elmar, Grafing) This second problem Elmar sees with the booking system is that the members don't use the optional field for the trip purpose. Using this field could allow for sharing a car trip, e.g. to go shopping or commuting, which however isn't used by most members.

The last element of community building is short-term engagement in the association that sometimes leads to long-term engagement. Incorporated in the association in Königsbrunn is a driving service for the elderly and people with disabilities that is taken out with the carsharing cars by some members of the association:

"We have an agency, which is occupied a few hours per week. So the people who need a ride, have this phone number they can call and Miss W., who is doing the relaying, and who is employed by the city of Königsbrunn and freed from her normal tasks for this, is taking the driving requests." (James, Königsbrunn)

The driving service is further connected to the local time share and the drivers get the time they drive as a time credit in the time share, creating benefits and networks across multiple associations, fostering local social connections. (Newman 2016) Another example of short-term engagement are short-term tasks, which some members take over. Robert helped in further developing the IT-System, which actually also introduced him to the board and the 'hard core' of the carsharing association: *"I told the board that I am a computer scientist and they said: 'Great, we are looking for computer scientists because our systems have to be updated.' And then I said: 'Ok, I can do that'. And that is how I got to know the board quite well and then they took me everywhere."* (Robert, Markt Schwaben) After being a member for many years, Ulrike decided to take over a position in the board of the association in Grafing. From her case it is well understandable, how social activities, social contacts and a nice appreciative atmosphere can support engagement in the association: *"Well, [the regulars' tables and getting to know people] I actually liked and I now started to*

become engaged in the association. Take some responsibilities in the board, something like that. Because I just think it is good and important." (Ulrike, Grafing)

Overall, the social contacts, the appreciative communication, the micro-management and the short-term engagement lead to the development of a kind of 'we-feeling' amongst the members of the carsharing associations:

"When you drive with such a car and there it is written on: 'GAT' in our case, 'Grafinger Autoteiler' [(Carsharing Grafing)]. This is a certain statement. So, when somebody drives by with such a car, you look, ok, who is sitting in it. If you know them, you might also greet them. Yeah, it is a little bit, well…some kind of we-feeling does develop there." (Bob, Grafing)

Elmar sees this development of community as a more general theme of sharing: "*Through sharing you are again becoming part of a social community. […] That is the really crucial point. […] In reality this society is missing the social cohesion and that we can [get back] through any initiatives for sharing.*" (Elmar, Grafing) Here the community is clearly recognizable as the warm place which protects from the hostile and individualized society invigorated by Bauman. (Bauman 2001) However, Bauman argued that community also has a dark side demanding unconditional loyalty and the renunciation from individual freedom: *"There it goes back to the social control. I don't want to make a negative impression in this group, because the value, my status in the group is more important, than the short-term benefit, that I can drive my car without paying something."* (Bob, Grafing)

The two sides of social control

In the case of the carsharing associations this dark side of community is the social control which comes with sharing cars in a personal, small-scale context. The first time this aspect was mentioned in an interview I overheard it, because it was more of a side-note in the context of another important statement: "*And like that many things happen in collegial understanding as well, there social control is also contributing. When I see the next person using the car not as a costumer but as one of us, then I leave the car behind differently and communicate differently.*" (Karl, Vaterstetten) It was only through the interview with Bob that this issue came to my attention: "*You have to remember which card you booked, which color. Sometimes I didn't know anymore which color it was and I put a note into the card safe, but that wasn't taken very well. Then the social control hits you immediately.*" (Bob, Grafing)

After having been pushed to this I found it in other interviews, albeit more subtly. I already talked about the micro-management of booking the car longer than needed to avoid overlaps. There are a few members who do this, but in the case of Helen it is explicitly for not 'getting hit' by the social control. She always books the car 30 to 45 minutes longer than she needs it, in case something unexpected happens, even if that costs her a bit more and makes the car unavailable for other members: "*It is better that it stands, than if at the end*

this e-mail is sent: 'Where is the car, I would have needed it now.' I prefer to put an hour more, instead of being the bad person at the end, I must say." (Helen, Grafing) Maxim called social control a social reference and alluded to the fact that in the small villages the associations are located *"there is no anonymity into which one can retreat."* (Maxim, Grafing) If there would be a damage to the car it would always be possible to trace it back to the person who caused it: *"This might also be a reason why there is a different feeling of responsibility. At the end towards oneself, because I want to remain a respectable person in the village. […] It is a feeling of responsibility that is supported from the outside, I would put it positively."* (Maxim, Grafing) This kind of demanded responsibility for the carsharing community also became visible, when Maxim felt obligated for becoming engaged in the board. At the end, there were enough other people and he *"was happy that it turned out that way […] and that I can continue sharing cars with a good feeling and without a bad consciousness."* (Maxim, Grafing) Obviously it wasn't his wish to become a member of the board, but the social obligation to the carsharing association would have pushed him to take responsibility.

The social control exists in the associations due to the existence of a community that follows a consensus in the form of agreed upon rules of behavior and is enforced individually by wanting to remain a respected member of the community. This results in a form of control and self-control amongst the association members, which leads to the members following the rules more than they would in other occasions, essentially giving up their individual freedom for the sake of the community. (Bauman 2001) When rules are not followed people can be nicely reminded to do better the next time, but are also blamed in e-mails, called out in member assemblies or blocked from using the cars or the public transport passes. In turn, avoidance strategies are found which include, cleaning although one isn't responsible for the dirt or paying more money and blocking the car to make sure one isn't late. This clearly is the dark side of community, because it hampers the functionality of the association as sharing the cars becomes less effective and compromises the community as members decide to leave.

However, in situations without a community that is able to enforce social control, it usually gets replaced by a form of technological control, which isn't necessarily a brighter alternative. (Ball 2007, Liang *et al.* 2018) This actually made me reconsider my quite negative perspective on social control and also Bob doesn't have this overly negative perspective. He told me a story of when somebody found 80€ in front of his former shop. Instead of just taking the money, they hung up a poster to find the owner of the money in which they also succeeded. He transfers this outcome to the carsharing association:

"I think [the carsharing association] is a good thing. And it actually makes me a bit proud, that it works here like that. Well, I call it social control here. […] But, social control makes life so much easier and cheaper. Social control used to be a vice control, one that restricted our behavior, yeah. But that isn't the case today." (Bob, Grafing)

Therefore, social control also has a positive side in that it reduces costs because the shared cars are kept cleaner, are treated more carefully and less quarrels happen between the members, which in the end is a manifestation of the existence of a caring community around the cars. The tension between the negative and positive side of social control is a first sign for the fragility of the process of building community and the instability of the both/and of function and community within the associations.

To conclude, I discussed how the functional and the communal aspect of the associations is taking shape amongst the association members. The members describe the functional aspect of the association as the common purpose of owning and using cars together. While for some this results in focusing solely on the service the association provides, most members recognize that organizing around a common purpose has effects that go beyond the mere service. Rather it leads to the development of a purpose community that uses rules in order to reach a common goal and a collective identity as 'carsharers'. This community is built through the development of social contacts, an appreciative communication amongst the members, the development of collaborative and sophisticated practices of micro-management and short-term engagement in the association. The social control that is exercised through the community, albeit sometimes harsh and reminiscent of the dark side described by Bauman, mostly serves the common purpose. Thence, from the members' perspective the association is both functional and communal through forming a community around a shared purpose, re-embedding automobility into a social context. (Polanyi 2001, Henderson 2009, Soron 2009, Newman 2016, 2017) However, on the organizational level, the tension between function and community is much stronger and it requires intensive labor to keep the association as a both/and of function and community instead of turning it into an either/or.

2.2 Laboring for community: Organizing a carsharing association through voluntary labor

In this section I discuss the functional and the communal aspects on the organizational level made up almost completely on voluntary labor. First I describe the effects of sharing cars within a community seen from an organizational perspective, then elaborate on the significance of voluntary engagement and lastly outline frictions between the functional and communal aspect caused by continuous growth.

Effects of building community from an organizational perspective

Some of the intended effects of building a carsharing community from the perspective of the people responsible for the day-to-day organization were already described above. Yet, from the organizational level, their more abstract outcomes – the establishment of a feeling of community and responsibility towards the shared cars – are the actual goal of the labor that is put into building community.

One effect of the community that wasn't prominent amongst the members, but present from an organizational perspective was the sharing of other things than cars due to the trust that developed: "*Because [we] are a community where something like sharing a car works, people are also borrowing other*

things to each other. […] You have some kind of trust, that people are treating your things properly, because the cars are also fine." (Rosa, Markt Schwaben) There is an e-mail list which is used by members for things around the shared cars, like borrowing a tent trailer, a roof box, tools or a holiday home or for social things, e.g. finding a flat, sharing a garden or finding someone to go on vacation with. This further supports the building of contacts and community and is how Antonio wants to develop the association: *"Especially when we have a regulars' table, the hard core shows up and there are just nice people amongst them, where you build up contact, where everything is more personal…and you are also getting feedback, that what you are doing for the association is valued."* (Antonio, Markt Schwaben)

Getting to know each other and the development of social contacts is one of the most important things when managing the association, because the contiguity they entail acts as a basis for community. (Maxwell 2012) Ultimately, the direct effects of community elaborated above depend on it:

"When the people see it as a shared project, then it is also the case, that they are more mistake tolerant. That in the case of problems they look for themselves how can I solve this. That they communicate amongst each other and find a balance, instead of taking it as a service. […] When I see the next person using the car not as a costumer but as one of us, then I leave the car behind differently and communicate differently." (Karl, Vaterstetten)

Therefore, on a more abstract level, knowing the other members and sharing a sense of community within the common project of the carsharing association leads to the members taking care of the shared cars and feeling responsible for them. In the context of the above quote Karl mentioned the aspect of social control. Therefore feeling responsible for and having part in the association is also related to social control, because it requires a collective feeling of responsibility towards the cars for social control to develop. This is particularly visible in Freising, which uses a commercial booking system from *German Railways*. There, people from outside the association can use the association cars, which unfortunately leads a higher rate of damages and dirt with external users: *"They don't have the association spirit somehow and are not that careful with the cars or at least you can't get them when there is damages. We just see an accumulation with these users."* (Simone, Freising)

The topic of responsibility came up strongly during many interviews, yet particularly with Clara when talking about the differences between the association in Vaterstetten and other forms of carsharing:

"We used [other carsharing] twice, but in these cars I never felt like they are my cars. And I think this feeling of responsibility is not that present. This feeling responsible and participating and to say after a three week vacation: 'Ok, of course the car is cleaned from us inside before we put it back' or when it is dirty from the outside we go through the car wash and don't let the person who is in charge of cleaning do it. That you still feel responsible." (Clara, Vaterstetten)

The feeling of responsibility develops into an identification with the association and the shared cars in terms of "*having a part in the association,*" (Clara, Vaterstetten) which results in the shared cars becoming the 'own' cars to a certain extent. The shared ownership of the cars, hence, supports a feeling of community amongst the members and enables the development of a feeling of responsibility for the cars and the shared purpose of carsharing. (Newman 2016)

Therefore, from an organizational perspective the both/and character of function and community is hugely important for running an association as the community supports the function and the function keeps the community together. However, the development of community, responsibility and shared care for the cars is not self-evident or automatic. It requires not only social contact between the members, but also a lot of labor in the form of voluntary engagement, which in itself strongly supports the fostering of responsibility, but also makes the association and the community feeling possible in the first place and thereby supports the re-embedding of automobility into a social context.

Voluntary engagement in the carsharing association

The feeling of community and responsibility present amongst the members of the carsharing associations is made possible by a strong commitment of individual members to spend their time on organizing the association on a voluntary basis. For each car exists a designated car warden, whose job is to take care of the car, by e.g. refilling oil or windshield cleaning fluid, checking the tire pressure, assessing damages, bringing the car to the workshop in case it needs to be repaired or being responsible for the TüV. The car wardens are often members who use a specific car frequently, long-term members or members with a mechanical background. In Vaterstetten there is a second member for each car who checks for cleanliness and cleans the car inside if necessary. This is not supposed to replace the members cleaning the car after a particularly dirty use, but is supposed to remove the accumulated dirt through regular everyday usage. This person's role is comparable to the cleaning parties, excluding of course the socializing aspect. Furthermore, there are members who take care of the key-safes, exchange the public transport passes, introduce new members, curate the website, manage public relations or the financial aspects. Also the board, usually two or three people, works on a voluntary basis. Overall 12 people are involved in Markt Schwaben, 18 in Grafing, 15 in Freising, more than 30 in Vaterstetten and less in smaller associations. Some of these tasks are compensated with free kilometers or waiving the monthly membership fee, but this is a mostly symbolic compensation for the voluntary labor. In Grafing car wardens have the benefit of having the car parked at their door, which can be a motivation to take care of a car: "*They get their own key and have the car in front of their door. […] I would use carsharing, but not as a full member, which means without my own car, if I wouldn't be a [warden]."* (Henri, Grafing)

Karl explained the significance of the voluntary engagement to me at length, focusing on mostly two aspects. First, voluntary engagement reduces the costs for running a carsharing association making it

economically feasible in the first place: "*[Voluntary engagement] made things possible, which financially would have been completely out of reach.*" (Karl, Vaterstetten) Second, and more important according to him, voluntary engagement enables the members to bring in what they are good at and thereby become engaged and bring the association forward:

> "*The last point is that people work for free. [...] Much more important is the point that everybody has a certain background, a certain education, a certain job experience and certain technical possibilities for different areas. And when there are people, who are excited for the cause and say: 'Yeah this is a good thing, there I can...I also participate a little bit in that'. Then they make things possible, because everybody brings in what they are good at.*" (Karl, Vaterstetten)

A good example is the treasurer of the association in Markt Schwaben. Doing the financial administration of an association with more than 100 members and extensive financial transactions can be a challenge for a person, who is not trained in it. Rosa told me that they "*are lucky now, we have a retired banker who does our finances. For him the booking back and forth is a game and he likes doing it.*" (Rosa, Markt Schwaben) A retired banker doing the finances doesn't only save money and makes the association possible, but also allows him to become part of the association and bring in what he is good at. Thence, the two aspects are combined. Another example is the booking system, which is now used by more than 40 associations across Germany for a symbolic price. As it was developed for free by members the development cost doesn't have to be included in the price, enabling an affordable and attractive carsharing offer: "*We have IT-specialists who developed our booking system, which we would have never been able to pay for and they still manage it.*" (Karl, Vaterstetten) But the low cost isn't the only or most important benefit of the booking system. The custom design of the booking system, possible due to voluntary member engagement, is programmed in a way that fosters social contacts and micro-management amongst the members in the association and thereby contributes to the development of responsibility and a feeling of community.

Overall, all board members see the voluntary engagement as a crucial element for the associations and their successful operation in the double sense of making carsharing cheap and competitive with private car ownership and allowing members to become part of the association fostering responsibility, trust and identification. The associations can only be successful because people dedicate their time and their skills to the cause of carsharing, because it is the only way of having carsharing at all in these rural municipalities. This makes voluntary labor a necessary condition for the development of community and responsibility, but also for the very existence of the associations. In the interviews three aspects were emphasized to ensure continuous voluntary engagement: the local need for carsharing, the sharing of the voluntary labor amongst many members and the long-term success of the engagement.

The first aspect is a local need and motivation for starting a carsharing association due to a missing alternative in the form of municipal or commercial carsharing services. Karl often made the experience that

only when the condition of non-existence is fulfilled people are willing to engage themselves in founding and running an association. He told me about multiple attempts in rural areas which failed. Either they were commercial carsharing organizations that were lastly too expensive to compete with the private car (especially carsharing with electric cars) or there was not enough engagement from local citizens. On the contrary, he also gave examples where carsharing grew rapidly once local people started to become locally engaged, for example in Erding. Without the local engagement and the feeling of doing it together for the common benefit, carsharing isn't successful in rural areas: *"There are people who come [together] by themselves. […] [But] it only comes into being, where one sees: 'This is great, I want that, that would be good for us, but without me doing it, it won't be there' and then it comes."* (Karl, Vaterstetten) Therefore, the voluntary engagement and its persistence depend on the socio-material circumstances of the respective municipality, a local need and motivation for founding a carsharing association and the local connections by the members:

> *"Carsharing is not a sure-fire success yet. […] It is difficult and it requires a lot of convincing work and for that you need an offer locally, which is suited to the place and has a certain standing in the municipality. Where there are people, who have a personal interest in bringing it further."* (Karl, Vaterstetten)

The second aspect for continuous engagement is that the work within the association is distributed amongst the members: *"With the voluntary labor you just have limits. […] I always have to pay attention that it is not becoming too much. At our association I make sure that the work is being distributed. That not everything depends on the board."* (Rosa, Markt Schwaben) This allows the association to become more stable, as it is not that bad when one person of 15 has to terminate their engagement, compared to one person of three. Further, the distribution makes voluntary engagement in the association more attractive, as the work-load remains manageable for engaged members: "*If everything is done by a few, then people say, yeah I would become engaged, but I can't put so much work into it, it is too much. But when everybody is doing a little bit, then this looks quite differently.*" (Karl, Vaterstetten) Spreading the work on many shoulders is actually something that has to be established in the first place: "*My first official act [as new board chairman] was that I found two people who did it with me, because I saw how much work it is.*" (Antonio, Markt Schwaben) After its creation the sharing of work has to be cultivated and managed continuously. Part of this management is that everybody who takes a task in the association is free to quit at any time without having to state any reasons. Nobody should be forced into a role and voluntary labor, because that would keep members from becoming engaged in the first place.

Third and last, it is important that the voluntary engagement is motivating in the sense of bringing the common cause of carsharing further:

> *"The person has to see a reason to work in the project, voluntarily and for free. And that needs a motivation. That also needs praise, it needs appreciation and it needs success. Success is always the*

biggest success. You need that and then the person likes to be engaged, people then actually have fun bringing themselves in." (Karl, Vaterstetten)

An example for such a motivation through success is that the carsharing association in Vaterstetten now is one of the main active associations in the municipality, with more than three percent of the population being part of it. But all associations are successful in the sense that they are growing continuously and spread carsharing successfully. Furthermore, the success of the associations is also an important motivation for new associations to be founded, such as Anzing in October 2018: *"We sat down together with [Karl] and thought about how we could do that here. He told us what is already happening in the region and then, at least for me, I then only realized how much is already happening in the region."* (Family Schmidt, Anzing)

Summing up, the extensive voluntary labor that is brought into the association plays an important role in supporting the development of feelings of responsibility and community amongst the members, also through the possibility of bringing themselves into the association. This makes carsharing financially feasible through reducing costs and enabling things that wouldn't be possible otherwise. Therefore, the voluntary engagement is a necessary condition for the existence of the associations, depending on a local need and motivation for starting carsharing, the sharing of work and the success of the endeavor. The way how voluntary labor is practiced, again brings out the both/and character of function and community in the association. While voluntary engagement is a necessity and its role thereby clearly functional, its actual practices and effects strongly support developing responsibility and community strengthening the communal aspect and the development of collective identity.

Growing pains: Tensions between community and function

However, the continuing growth of the associations affects the voluntary engagement and creates tensions between the functional and communal aspect of the associations. Since their founding the associations experience a slow but steady growth. The association in Vaterstetten was founded in 1992 with five families sharing one car. Now the association has over 400 members sharing 22 cars.[22] Similarly, the association in Freising, founded in 1993, now has 300 members sharing 19 cars, the association in Grafing which started in 1995 has grown to 200 members and 14 cars, and Markt Schwaben, founded in 1993, to 100 members and nine cars. Also younger associations are constantly growing, some of them buying a new car every year. Due to this growth one doesn't know all the members anymore as at the beginning: *"At best you see each other at the member assembly, but this time there also only were 40% or so. [...] This means that there are many you don't really see."* (Antonio, Markt Schwaben) When the associations were still small, one was able to know everybody and there was a lot of exchange, shared activities and mutual understanding

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[22] Association members are counted as households or organizations, not through individual users.

between the sharers. But now the community feeling, voluntary engagement and shared responsibility are seen as decreasing:

"From the 300 people, you don't know everybody. That is just over. This inner closeness. […] And then the voluntary engagement, which in our case still strongly exists, but it simply declines. Because the responsibilities, the feeling of responsibility is not there anymore from a certain number of people, I think." (Clara, Vaterstetten)

Also in the younger and smaller associations with less cars and members the decreasing community feeling is a concern. For example in Erding, where Murray is part of the board since they became independent from the association in Markt Schwaben.[23] In 2015 they shared one car amongst six households, whereas in 2019 they shared four cars amongst 24 members. Murray says that he isn't able to recognize all the members on the street anymore, also because not everybody comes to the member assembly: *"There I feel this change, that with the size of the association, the association spirit that we are a community which buys cars together and uses cars together, well…that this rather goes missing."* (Murray, Erding) One of the consequences of the growth Murray and other board members see is a reduced appreciation of the extensive labor for keeping the association running: *"I have the feeling that many rather think: 'They should be happy, that I pay my membership fee.' But with that we finance our common cars! […] [Carsharing] isn't something that is God-given, but something where somebody puts a lot of work into.*" (Murray, Erding)

Murray elaborated at length on how much work it is to do the finances when new tax regulations come in or to check all the driving licenses every year and that people just don't show their licenses. He then has to write three e-mails, try it via phone, has to block the member, change the password, give a new one and at some point has to meet the member and un-block her or him. Overall, this takes up a lot of time and is mainly met with frustration about being blocked, which again leads to frustration on Murray's side:

"I shouldn't have to run after [them] because of showing the driver's license. Apart from that go for [just using it. They are] getting a bill once a month and maybe every other month an e-mail where it is written what has to be paid attention too, what hasn't being working. […] We are operating cars together, [they] shouldn't click it away like advertisements." (Murray, Erding)

This frustration and disappointment was further deepened, when there no volunteer for a car warden for the new car. Therefore, they now pay an external car workshop to take care of it, increasing the price for using the cars. These problems of a decreasing community feeling and the difficulty of finding members who

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[23] In the beginning carsharing in Erding was managed by the association in Freising. In 2013 the association in Markt Schwaben, which is on the same suburban train line, took over the one remaining, but unprofitable car. With the change in the booking system, the resulting lower prices and the easier local contact between the members the car more often. After a second car became necessary in 2015 the association in Markt Schwaben convinced Murray and the other carsharers in Erding to found their own association.

are willing to become engaged are a shared concern amongst the associations, especially with the growing size, which Henri explained to me like this:

"I see it as a problem, that we have members who, this sounds a bit stupid, do not understand the spirit of rural carsharing. Who simply book a car, as they would take a car with a big carsharing organization in Munich: 'I take the car, drive, and I don't care about the rest.' This contradicts the spirit of this rural carsharing the way we actually do it." (Henri, Grafing)

This spirit of rural carsharing are the feelings of community and responsibility that result in taking care of the car, micro-managing with other members and voluntary engagement. New members are often unfamiliar with this way of practicing carsharing, supposedly only interested in the service of using a car or require some time to get used to it. However, the way carsharing is done in the associations "*makes it more or less necessary that one knows each other, or that every member has a certain feeling of responsibility towards the cars...I would say, these are our cars. Every member is using their own cars. But we are leaving that phase and that makes a bit of troubles in the association.*" (Henri, Grafing) Thence, even a small growth can destabilize the feelings of community and responsibility and the appreciation and motivation for voluntary labor, endangering the both/and of function and community in non-commercial carsharing. These problems could lead to a decrease of the communal aspect of the associations and a decline in voluntary engagement, unless actively worked against through building and maintaining a feeling of community and responsibility especially amongst new members. However, the development of the biggest association indicates that not all tensions are caused through a decrease of community and neither can be solved through building a community feeling.

Vaterstetten ran into the problem of coordinating volunteers for short-term tasks in the case of sickness or sudden withdrawal from voluntary engagement, which thus became increasingly labor-intensive and many tasks got stuck with the board. Furthermore, the board was constantly growing due to the increased tasks, which made the organization of their voluntary labor more difficult. Therefore, the board saw the necessity for hiring a person to take over short-term and organizational tasks:

"The goal is to give the operative tasks in paid hands, but slowly. […] So we calculated, a half-day employee costs us around 20,000 €. And 20,000 € was a price raise of 5 per cent. […] And this new concept, giving it into paid hands, was approved. […] The members did understand that." (Karl, Vaterstetten)

The benefit of this hired person is that he/she is *"more flexible and has to do what you tell them, because you can't tell a volunteer what to do,"* (Karl, Vaterstetten) taking organizational efforts from the board and allowing to fill gaps in voluntary labor. However, the board feared that the voluntary engagement could decrease, because now people doing the same work, get different rewards. The paid person gets an actual wage, whereas the volunteer 'only' gets free kilometers. So far there hasn't been a further decrease in the voluntary engagement. Yet, it is an open question how the employment of people in the associations is going

to influence the community feeling and the voluntary engagement, because this development is seen as a commercialization of the practice of non-commercial carsharing, which increases prices and potentially fosters the perception of the carsharing association as a service about which also Simone and other board members, are worrying:

"The bigger it gets the more you see it as a service provision, as a service. More commercial and less as an association, as sharing together. […] You see that at the member assembly. There are many interested, also with the costs and do we want to continue growing or just stay in this size?" (Simone, Freising)

Briefly summing up, the ongoing growth of the association affects the feelings of community and responsibility amongst the members and in its consequence also the motivation for voluntary labor. Thereby, tensions between the communal and functional aspect of the associations develop. The both/and character of function and community is endangered of becoming an either/or through an increasing commercialization and service orientation, which at the end makes the existence of a community redundant, also threatening the collective identity as non-commercial carsharers built over time. Albeit this sounds like a bleak outlook, the carsharing associations so far are the only successful form of carsharing in rural municipalities, thanks to the huge amount of labor spent on organizing the associations on a voluntary basis. There have been commercial attempts to start carsharing in rural areas by established carsharing companies or new start-ups, however, none of these are stable nor growing: *"We have the voluntary, citizen organized carsharing offers which are viable and economically stable in the long term and also further develop and we have different attempts from commercial providers which fail."* (Karl, Vaterstetten) Therefore, there is also a strong optimism amongst most people on the organizational level of the association of being able to retain the both/and character of function and community through continuous efforts: *"Still now with this size, albeit it vanishes a little bit and you have to work against it, we still have a very broad voluntary engagement, a very broad understanding, of we are doing this together for us."* (Karl, Vaterstetten)

In the following section, based on the relationship between function and community presented from the member and the organizational perspective, I will give an outlook of how the both/and of function and community could be sustained through fostering trust and responsibility.

2.3 Sustaining the both/and of function and community: Trust and responsibility

From an organizational perspective the carsharing associations are successful because of a community feeling that develops around the shared cars, strongly supported by voluntary labor. However, the associations also rely on these in order to make carsharing a viable option in rural municipalities in the first place, creating a need for their sustention. From the members' perspective the association is on one side a functional and service-oriented construct. However, the association was also frequently described as a place with like-minded people to make contacts and where an appreciative communication, micro-management and short-term engagement are part of being a member in the carsharing community. Out of this perception

the long-term engagement of newer members developed, hinting that for securing the both/and character of function and community, the establishment of trust and responsibility is required.

Most members genuinely trust the association and its organizers, especially due to the association form and the voluntary engagement:

"Well, I think you have trust in people who are offering something like that, because you quickly think these are good people or so. […] You don't do it just like that, when you don't have an inner conviction that there is something good in it. And through that there is a basic trust for sure." (David, Königsbrunn)

The motivation behind voluntary engagement then entails the message that the association is not misused and the members are not betrayed, which provides trust as basic pillar of the association and the community around it. This kind of trust is also exemplified in the booking system still allowing to book with another person's account, even in Vaterstetten and Grafing with their 400 and 200 members: *"We can re-book for each other. Every time I could book a car on the name of another member. That comes from the founding period with five people, where they trusted each other that nobody is misusing it."* (Henri, Grafing) Furthermore, the association as a legal construct provides trust that in case of an accident or other frictions everything is taken care off: *"Well I think everybody feels a bit more secure when things like…well, there are barriers with what is happening when I have an accident…and that it is clearly regulated what happens in case A or case B."* (Family Schmidt, Anzing) Thence, trust in the association is intrinsically connected to its non-commercial nature based on voluntary labor and personal motivation for a common cause. While this trust could also be maintained in a more service-oriented organizational form, the association form and the opportunity of voluntary engagement by potentially everybody, increases the possibility for identification with the association and its goal and thereby the development of feelings of community, responsibility and collective identity. Trust is thus something that is transmitted through the organizational structure of the association towards the members.

Responsibility for the cars and the association, however, first and foremost has to be enacted by each member individually:

"[In a sports association] there is this level in between, where someone takes the responsibility when the gym is used. […] With us the user goes to the car and is for himself. And when they are not in the association once in a while…Well, who reads the usage regulations every few weeks? […] It works and works but you don't even know that you are supposed to fuel the car, when only a third is left in the tank [and that other members get annoyed]." (Murray, Erding)

However, responsibility is a necessary condition for the association to run smoothly, making its origin in the individual members problematic from an organizational perspective and which is why the ongoing growth also causes problems. There are three potential pathways of how the development of responsibility can be

strengthened amongst new and old members, which are all rooted in the structure of the association. First, fostering voluntary engagement is particularly suited to support the development of individual responsibility. Second, the local reference of the association within a single municipality allows to use the social reference within the existing municipal community in order to communicate the carsharing association as a communal project, wherefore following the rules benefits the whole municipality. Third, many members already ground their responsibility for the cars in the fact that they see them as partially their own: "*You feel like a member, because one owns, well I co-own these cars und then I am responsible for the cars looking acceptable or that they are fueled or that when something is broken I tell the car warden. […] It is a consciousness for responsibility.*" (Ulrike, Grafing) Thence, as already hinted at the feeling of responsibility emerges from the shared ownership of the cars, which only the legal form of the association allows:

> "*Of course, there are professional providers like Car2Go or StattAuto or something else. We discussed this with [Karl], but that was much more expensive and there also nobody feels responsible for the car. On the contrary in the association it is like that. This is our capital and everybody has to look after it and that seems to work quite well.*" (Family Schmidt, Anzing)

Overall, I want to emphasize, that together trust in the association and responsibility by the members have been essential pillars for the association to run successfully and keep its character of being both functional and communal at the same time. Trust and responsibility are mostly supported by the organizational structure of the association, especially the possibility for voluntary engagement based on individual motivation, the local embeddedness and the shared ownership of the cars. While there is a need to develop the association further due to the income of more members, in order to not become a mere carsharing service, with all the problems attached to it, it is important to assure the continued existence of these aspects in order to sustain the feeling as a carsharing community and the collective identity as non-commercial carsharers, which re-embed automobility into a social context and foster collective agency. (Buechler 2000, Newman 2016, 2017, Wright 2019)

3   Threatening, strengthening and maintaining community

The private carsharing arrangements usually emerged from an already existing community of neighbors, friends or the larger family. Instead of building community, these arrangements rather influenced community by threatening or strengthening it. As described in the introduction to the cases the private sharing arrangements can be broadly grouped according to their origin and character as either a project or coincidence. This grouping seems to coincide with the type and amount of rules present in the arrangements. In their relation the character and the rules open two perspectives on the carsharing arrangement and its relation to community. On one side, the car is seen as a potential threat for the existing community, wherefore rules are a necessary element to meet this danger. On the other side, the car is also a connecting

element for the sharing community and sometimes beyond it. It thereby contributes to the experience and enactment of trust and strengthens the existing community. Naturally, these are not mutually exclusive as both sides are present in most arrangements, but within the arrangements the sides were differently emphasized.

3.1 Threatening community: What if the shared car ruins what we have?

In the process of building up a private sharing arrangement Selma was concerned about the car becoming a threat to the relationship they established with their neighbors:

"There is no manual, we can only do it the way we think. But if that works out or our neighbors then become our enemies…that would be a pity, if you get into a fight because of a good idea and out of good will, because something goes wrong. […] Because you know, how do you start regulating it on a smaller level? Who is cleaning the car? Who is fueling the car, etc.?" (Selma)

Thus, sharing a car can be perceived as an actual threat to an existing community of friends or neighbors. For people who see and emphasize the potential for conflict it is important to think about common rules for sharing the car before starting to share in order to avoid critical situations to become a problem.

When Walter started sharing, it was very important for the group to come up with clear rules so they don't get into a fight about the car: *"From the beginning we need to have clear rules how the car is shared, and not only when something is happening, because then there is going to be conflict. And in no case we wanted to have a strife, because it was clear to us, that we want to get along for a long time."* (Walter) They sat together and agreed that the costs are shared by kilometers driven, a driver's logbook is kept, a commercial carsharing is used and included in the shared bill in case of overlaps, the person who has the car in front of the door is allowed to use it for spontaneous trips and most importantly how damages are dealt with:

"When the car breaks, [by principle] no one is assumed to have done it on purpose or in ill will, something like that just happens. When somebody drives in a scratch then we still pay for it together. […] We clearly communicated what the agreement is and I think that is the most important thing, no matter what kind of agreement it is in the end." (Walter)

This precaution came from knowing about cases in their wider circle of friends, where an accident caused a fight and problems within the friendship. Therefore in addition to all the rules, in order to avoid misunderstandings or usage conflicts they communicated from very early on if they had plans, especially for the holidays, but also if there was an urgent necessity for using a car on either side so that they could negotiate needs and find a common solution early on: *"You took each other into consideration and weighed out, well I have this and you have that, then maybe I look for another mode of transport."* (Walter)

Deciding and agreeing on who uses the car when was one of the most common problems. In the arrangement Raya was part of extensive rules existed to make clear who has priority for using the car and who has to pay for what in order to avoid conflicts in their friendship. For avoiding usage conflicts both sharing parties also became members of *StattAuto*, which was used in case the shared car was needed but not available: *"Usage conflicts we solved by including StattAuto. […] StattAuto came into the arrangement closely after we started, when we thought about what to do when everybody somehow needs a car?"* (Raya) Furthermore, the arrangement included rules about priority times for each sharing party, a rule allowing each party to leave the arrangement whenever they want and a complex scheme on how the financial side – insurance, fixed costs, usage costs, repairs, inclusion of other modes of transport used in case of conflicts and the usage of the car as a company car – of the shared car is dealt with.

Also the camping van sharing arrangement consists of many rules, albeit in order to organize the sharing between initially strangers. Ellen and Mimi and their changing sharing partners actually set up a contract for sharing the van, which regulates financial and organizational aspects of sharing the car.[24] They still run into issues when dividing the school holidays, which is solved through sitting together at the beginning of the year to negotiate the usage in the holidays. And in case there actually occur conflicts they sit together, talk about them and try to find a compromise where the needs of everybody are still meet. Ellen, Mimi and August, the current camping van sharing group, know each other through sharing the bus, but over time they developed a kind of community, which however is strongly dependent on the vehicle:

> Ellen: *"Now we are only three people, when one person says, I leave the arrangement, then that's it. I can imagine. I don't know, but I can imagine, that now we are a little bit dependent on each other. It is just not that easy I think. […]"*
> August: *"And that is the dilemma a bit. […] Probably it would be the end of the bus community when the bus doesn't work anymore."* (Camper)

In their case a dependency between the sharers developed, which, supported by extensive ways of dealing with conflicts, ensured the endurance of sharing the van through the building of a community. However the dependency is now also perceived negatively as 'not easy' and 'a dilemma' and might cause frictions, when debating if a repair is undertaken or not. So although the arrangement didn't origin from an existing community, the shared vehicle again is perceived as something that can become problematic within the grown community of sharers.

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[24] This contract template was developed by the German Transport Club (VCD) and is available on the Internet: https://shop.vcd.org/shop/katalog/details.php?x=1&artikelnummer=2002. It regulates the establishment of so-called neighborhood cars on an organizational level, e.g. finances, cleaning, fueling, parking location, communication, key arrangement and usage priority.

The last example I want to give is the group sharing Karl-Theodor. At the beginning they were actually worried that the car might become something that creates conflicts between them: *"The consideration that, could it be that this is something that is standing between us as friends in case there is a problem?"* (Karl-Theodor) Therefore they also developed a sharing contract, which they however never signed in the end:

Stella: *"The contract we worked out together made sense, because already before buying the car we met multiple times and thought about how everything is regulated to avoid conflicts. That even before starting everything is clear, so that when something is that you then…well, it could become uncomfortable instead. […] And therefore, even if we did not sign it now…"*

Tariq: *"It is a valid contract!"*

Cinzia: *"We still agreed on it. And that had, was good for me, because it then also was clearly regulated."* (Karl-Theodor)

Therefore, thinking through how the actual sharing might threaten their existing friendship was the first step to deal with potential problems. The second step was to think about possible solutions. For example they agreed on sharing the car bi-annually and on a 'scrapping boarder', which is the cost of a repair beyond which they wouldn't repair the car. Thinking about rules for potential problems, however, did not only help in overcoming the threat connected to the shared car but also emphasized the shared responsibility on the car: *"I wouldn't be as careful with my own car as I am with a shared car. […] [If] I would drive the car to scraps. Then I would…then that would be sad, but I wouldn't be sadder, than if somebody else of the three of you would do it. Because you share the responsibility."* (Karl-Theodor)

Thus, a privately shared car can be seen as a threat to the existing community as it might cause conflicts between the sharers. To prevent these problems, the groups come up with rules on the shared use of the cars, which not only offers solutions for these problems, but also supports cooperation and responsibility for the shared car, ultimately, resulting in strengthening and maintain the community of the private carsharers.

3.2 Strengthening and maintaining community: The shared car as connecting element

Talking so much with the group around Karl-Theodor about their process of building up their sharing arrangement and the potential problems that are on that way, I was curious about how sharing a car together now actually is. As in the other cases, they so far did not run into more serious problems or conflicts and they also don't want to give the car so much meaning as that it changed their relationship with each other. However, the car was baptized, is now called Karl-Theodor and became an integral part of the group:

Tariq: *"He also got multiple nick names."* [Laughter] […]

Cinzia: *"Yes, he got that immediately. We baptized him."* [...]

Stella: *"Well, we just have a new group member, the [sic] Karl-Theodor." […] It just is a common thing in addition…and with the shared WhatsApp group and you send each other videos, when you are going through the car wash with Karl-Theodor."* (Karl-Theodor)

In the case of Karl-Theodor it is quite obvious how the shared car cannot only threaten but also maintain and even strengthen community by becoming a connecting element. Karl-Theodor was actually described as "*somehow a project and not just a vehicle*", which is cared for and used communally, for example when changing tires together, going with him to their favorite restaurant or sharing him for trips for skiing or to the lake: *"He has four doors […and five seats and five seatbelts…] That you can actually also use him together. Not that you go here and there alone, but it is a communitarian leisure car."* (Karl-Theodor)

Also the camping van sharing arrangement is an example for the two roles of the car. The 'bus community', as they call it, is not only a dependency maintained through the common rules and the contract, but also through more social meetings in relation to the bus: *"Once a year we meet for derusting the car and then we have to arrange for workshop and TüV appointments for which sometimes things need to be prepared. And as mentioned the yearly meeting for planning the vacations."* (Camper) Based on these regular meetings they developed a community in which they micro-manage the bus, e.g. go shopping together, share a route or change usage on short notice, know about each other's flaws, e.g. forgetting to sign out of the calendar and also negotiate the needs of the different sharers. In their arrangement a feeling of familiarity and trust developed in which one isn't working against each other, but is able to solve challenges and conflicts together, resembling the building of community in the associations.

One last example for the co-presence of both sides is the case of Martha. Through the shared use of the car of Martha's parents the partner of Martha was introduced into the family:

"Through him kind of being the new one in the family, the fact that he was careful with the car and that he attaches importance to vacuuming the car or brings it back fully fueled, actually built up trust. […] [The car] is not a mere object of utility for [my dad] and therefore I believe that this was to a certain extent a trust building measure for the newcomer in the family." (Martha)

Martha and her partner treat the car with care, clean it after they used it, put a small treat into the car and regularly stay for coffee or dinner when picking up or bringing back the car. However, she told me about a situation where her dad was actually going with her partner in the car to check out how he was driving and where they actually got into a small dispute, which nearly made Martha and her partner quit sharing the car. She also said, that if they had accidents regularly or wouldn't care for the car properly her parents would probably not give their car to them anymore, clearly showing how the shared car maintains but also potentially threatens existing relationships at the same time.

Yet, the privately shared car mostly enabled more connection between the sharers, also in most of the cases where it was perceived as a potential threat. Karin and her husband are sharing a cargobike and a bike trailer with their neighbors, which both are parked in the parking spot Karin and her husband have in the parking garage of their shared building. Karin described to me the many similarities between them and their neighbors and emphasized their easy-goingness in relation to sharing which she sees as a prerequisite: *"They are pretty laid back, pretty easy-going people, I think that is key if you are going to share anything. You have, on a personal level, you have to be very flexible and understanding and easy going. Otherwise you have: 'No, I need it, nanana.' And then it just doesn't work."* (Karin) Afterwards she explained to me that their friendship got more intense in the last year they were sharing the cargobike, but she doesn't connect these two. Whereas I don't want to contradict her, I still want to argue that sharing supported the development of that friendship by providing a basis on which the above similarities could be practically experienced and enacted. (Richardson 2015)

I want to support this claim with Beverly, who was sharing two different cars with different people over the course of twelve years. She started sharing the first car with a friend from home she knew through school, but the arrangement actually included other friends who needed a car and at some point also a third regular person, who then also started sharing her own car she got after the shared car broke. Beverly characterized this sharing as something *"where you really see it is a circle of friends, you are just somehow trusting on each other. […] Where you are open to each other and where generally sharing together is in the foreground."* (Beverly) In the second case she was sharing the car with a more distant friend and she told me that *"definitely I got to know him better through that. Because you meet each other more often and also get into exchange."* (Beverly) She also emphasized the importance of being easy-going and relaxed when sharing a car: *"You just have to be relaxed. You can't be like…oh, there is a stain and the car I…if it bothers you, then clean again, vacuum and fine it is. […] But [that it worked] could be, because all parties I did it with so far were really easy-going people."* (Beverly) This easy-goingness is also reflected in the fact, that Beverly, Karin and their sharers didn't really have a lot of rules and agreed on the usage on the spot or on short notice. In both cases the arrangement enables the practical experience of assumed similarities between the sharers and thereby provides an important element in enacting the existing friendship, thereby strengthening their community.

Nancy told me that Louis used to drive her to the mountain hut, where they got to know each other and were working together, and then took the shared car home: *"Well we are friends. I don't know how it would be if we couldn't get along privately and the car would be the only connection. […] I like to do her a favor and spend time with her and you can spend time together."* (Mountain Hut) They told me that they actually both have a bad consciousness that they use it too much – Nancy even calls Louis to ask if he wants to use the car – and *"it is rather that we both would like the other one to be able to do their things."* (Mountain Hut) Thereby,

for them the shared car is now an active part in enacting their friendship: "*The car is the one idea where we both are involved that is just working. […] Insofar the car is also something really nice. For me it is cool, because I don't know this, that I can trust someone like that. […] So it is connecting as well. It sustains our friendship a little bit.*" (Mountain Hut) Both of them also emphasized easy-goingness as an important characteristic of their arrangement, because they don't have a lot of rules around their carsharing, except for clear communication of plans and needs at any point as basic condition.

The attention to the other person's needs was also quite strong in Ivan's arrangement where they developed "*an understanding for the mobility or the automobility needs of the others*." (Ivan) This was enabled through the car and its schedule being a frequent topic during the shared dinners and in case there were other frictions within the family the car served as an "*additional communication cause*" (Ivan) to get back together again: "*You are moving in a group context. […] And yeah it is a form of community and a new closeness relationship is developing, because [we] have an interdependency.*" (Ivan) This interdependency and closeness relationship became particularly visible between Judith and the person she is sharing a car with. After Judith told me about her everyday life, I was curious about why she actually still is part of the arrangement, because she doesn't use the car a lot and if she uses it, it is for shorter distances she also often does by bike or public transport. She responded that besides wanting to have a car available she stays in the arrangement because she doesn't want to abandon her fellow sharer:

> "*She would have to find somebody else. […] And she is political as me, so my opinion, I would have abandoned her. […] I abandon her, is what I think. That is the thing with private carsharing. Albeit she would probably find somebody else quickly, but why should she? I actually like that I can have one.*" (Judith)

So, while on one side there is a dependency between the two, Judith doesn't mind that, because she still has the benefit of being able to have a car on short notice. Additionally, her understanding that she would abandon her fellow sharer if she would decide to not need a car anymore, speaks to me as a feeling of solidarity contributing to the maintenance of their carsharing community and long-term friendship. (Prainsack and Buyx 2017)

Summing up, in the private carsharing arrangements community mostly took the position as an enabler for sharing. However, in quite a few of the arrangements there existed a fear that the existing community could suffer from a fight, especially in the case of an accident or major damage. Another potential source of conflict was seen in distributing the car-use between the sharers. In most sharing arrangements the group therefore agreed on rules on how to deal with accidents, how to share the costs and how to deal with usage conflicts, in order to maintain the existing friendship and community. Across most arrangements, easy-goingness and relaxedness, but also a certain seriousness in the will for cooperation were emphasized as important requirement for privately sharing a car:

"A certain relaxedness, but at the same time a certain seriousness, yeah. A consciousness, but at the same time being relaxed about things. Talk about problems from early on in an honest way and, well, ideally avoid conflict by talking about things openly from early on. [...] [We] solve problems somehow together and everybody gets a little bit and should give up as little as possible." (Walter)

It is in this attitude that the both/and of function and community present in the carsharing associations also becomes visible in the private sharing arrangements. While the relaxedness and easy-goingness appeal to the communal aspect of sharing a car, the seriousness is required in order for carsharing to actually function, also in a private sharing arrangement. Therefore, this attitude allows to deepen trust and solidarity within existing communities of friends, neighbors or the larger family while also enabling the successful common use of a car, socially re-embedding automobility.

4   Community, collective identity and (everyday) resistance

In this chapter I discussed the development of a feeling of community in the carsharing associations and the private sharing arrangements. In the carsharing associations this development is supported both from the ordinary members through building social contacts, communicating appreciatively, micro-managing, and short-term volunteering and from the organization level through its consistence of almost completely voluntary labor. Overall, these aspects combine functional with communal qualities and thereby support the emergence of trust in the association and individual responsibility for the cars, which serve as the basis for building a community around the shared purpose of carsharing. In the private sharing arrangements community usually wasn't build but rather existing communities were strengthened and maintained through rules, deliberation, enactment of trust between friends and the re-assertion of communalities. It is important to note, that these processes are not mono-directional or linear, but ambivalent, meandering and ridden with tension as visible in the difficulties of the associations in finding and managing volunteers, the issue of social control or the perceived threat of private carsharing for a friendship or a functioning neighborhood. Nevertheless, in the practices of non-commercial carsharing I investigated, doing something together in a group, often self-described as community, attained a central importance.

This brings me back to my initial conceptualization of community elaborated on in the introduction. There, I defined community as a group of people who practice a specific culture along shared symbols with different meanings. (Cohen 1985) The practices shared amongst a group of people through shared symbols with different meanings thus are the essential part of building community and serve as individual and collective identity reference and provide resources and repositories to re-appropriate the conditions of life. (Bauman 2001) In my case of non-commercial carsharing thence, community develops out of the practiced culture of owning and using cars together through shared symbols such as the cars, public transport passes but also the booking platform, micro-management, voluntary engagement and shared activities to re-

appropriate the conditions of how to be mobile. As became clear, especially the members of the carsharing associations attach different meanings to the practiced culture of carsharing and its symbols – as service, as legal construct, as purpose, as solidarity or as social control – emphasizing community as an aggregating device instead of dependent on a predetermined common understanding. (Cohen 1985, Maxwell 2012) By combining functional and communal aspects, the practice of non-commercial carsharing thereby becomes the nucleus around which communities were built up and a central point of reference for its members. This building of community through non-commercial carsharing has two important effects. First, it offers a social context for automobility working against its atomizing and fragmenting tendencies, whereby it becomes socially re-embedded. Second, non-commercial carsharing provides a collective identity to its members, which is the prerequisite for the exercise of collective agency in the process of altering everyday practices through which social structures are reproduced in the individual. (Joseph 2002, 2003)

Re-embedding automobility into its societal context

First, I will provide examples of how the building of community through non-commercial carsharing is socially re-embedding automobility, in its first meaning of contextualization. (Gibson-Graham *et al.* 2016) This actually closely relates to the critique made of automobility in the previous chapter regarding its disintegrating influences on the social fabric. (Conley and McLaren 2009b, Henderson 2009)

Robert understands carsharing as a more social form of organizing mobility, because the members of the carsharing association have to collectively care for and manage the cars, enabling more connections between people: *"With the associations you have to clean and maintain the cars yourself. Also the financing goes through the members. There always comes an email when a new car is bought."* (Robert, Markt Schwaben) Karl contrasts this sociality with the common usage of the personal car:

"Compared to the personal car – I get in and want to know as little as possible from the other [people on the street], who are only bothering me when they aren't able to get away quick enough – carsharing is a communicative form. You do something together and depend on each other. You have to exchange [knowledge], more or less, you have conflicts, which you somehow have to solve." (Karl, Vaterstetten)

For him the collective aspect of carsharing actually is a contribution to a better society and it is for this need of collective organization that Elmar emphasizes how generally "*sharing makes you again part of community*" (Elmar, Grafing) and thereby contributes to more sociality amongst neighbors, municipalities and within society in general.

Similarly, the driving service for the elderly and people with disabilities in Königsbrunn does not only serve a social purpose but through regular driving trips and regular meetings of the drivers also builds up social connections between the drivers and the people they drive, making carsharing a social and communal endeavor: *"This idea is connecting people somehow. That I think…it is a solidarity community so to say."*

(Family Schuster, Königsbrunn) This notion of solidarity is also relevant for Murray, Judith and Frigga. Murray considers himself very lucky to be able to have a good job, enough to eat and healthy kids and therefore wants to give something back to society by spending his free-time on managing the carsharing association. Judith gives solidarity a different meaning. Instead of referring to a societal responsibility and the idea of giving something back for a privileged life, she feels solidary towards her fellow carsharer, who needs the carsharing arrangement to be able to afford access to a car. Frigga probably has the farthest reaching notion of solidarity in relation to carsharing. For her, the existence of the carsharing association and the form of sociality that is present amongst its members is a reminder of a completely different societal order:

"There are really solidary people. It is a different kind of people as usually normal in this system. […] I find fantastic, that in this societal order, where usually elbows have the great power and everybody wants to get back at the other to get a higher payment or climb in the hierarchy…that something like [carsharing] can work. It is a kind of socialism for me." (Frigga, Markt Schwaben)

Other carsharers expressed this simply in terms of carsharing providing social cohesion: *"I think in a small town like this it provides a certain social cohesion. More than with other [forms of carsharing], because people have to become engaged and through that maybe also act as multipliers."* (Ulrike, Grafing) Ulrike, but also other members in the carsharing associations, experienced this very practically, because they moved from other parts of Germany and the association helped them in gaining new social contacts in their new places of residence. For Ivan the sociality and social context derives directly from the group context of private carsharing. He conceptualizes his carsharing arrangement as a group of people which is having the same goal and sees their action in the larger context of improving environmental and societal living conditions. Thus, non-commercial carsharing builds new proximity relations that enable dealing with the big questions of humanity on a small scale: *"Isn't it great, that we are again confronting things in groups. That you work on fundamental questions of human life which exist at the moment on a small scale? And I think that is the spirit of sharing."* (Ivan)

The building of new proximity relations resonates with the definition of re-embedding provided by Giddens as *"the reappropriation or recasting of disembedded social relations so as to pin them down (however partially or transitorily) to local conditions of time and place."* (Giddens 1991b, p. 79) Therefore I argue, that non-commercial not only re-embeds automobility ecologically through connection automobility to resource depletion and the climate crisis, but also re-embeds automobility socially, by opposing fragmentation and invoking a new culture of how automobility is practiced. (Polanyi 2001, Sheller 2004, 2018, Pieterse 2008, Soron 2009, Gibson-Graham *et al.* 2016, Prainsack and Buyx 2017) Through non-commercial carsharing automobility ceases to be practiced, experienced and confronted individually. (Wells and Xenias 2015) Rather it becomes re-embedded into a community with a collective identity which allows to collectively work on *"ways to channel and restrict market impacts through the creation of new regulations, laws, or social*

institutions," (Barham 1997, p. 241) including the collective alteration of hegemonic everyday practices of automobility and dominant cultures of (auto)mobility. (Deffner *et al.* 2006, Rau 2008, Sheller 2012, García-López *et al.* 2017, Velicu and García-López 2018)

Collective identity and collective agency as vehicles of (everyday) resistance

As became visible, for many carsharers the practices of and the community around non-commercial carsharing serve as a part of their identity. Thence, referring to themselves as carsharers and as part of 'the carsharing' are signs for the emergence of an alternative collective identity based on the practices of non-commercial carsharing, invoking the second meaning of re-embedding as counter-movement and form of resistance. (Thorne 1996, Barham 1997, Polanyi 2001) While this again confirms the counter-hegemonic tendencies within non-commercial carsharing, I want to go a step further and flesh out how the collectivity of this alternative identity enables collective agency.

Buechler sees collective identity as a prerequisite for social movements[25] to accomplish their goals and as central in the "*translation of structural inequality into subjective discontent.*" (Buechler 2000, p. 190) Collective identity in his understanding must have a "*shared salient characteristic, a corresponding form of consciousness, and opposition to some dominant order,*" (ibid., p. 190) which I think parallels the above understanding of community as practiced culture through shared symbols (characteristic) with attached meanings (consciousness) to re-appropriate conditions of life (opposition). (Cohen 1985, Bauman 2001) Thence, non-commercial carsharing invokes a collective identity through owning and using cars together with a consciousness of its ecological and social damages in order to overcome the hegemony of automobility in everyday life. (Polanyi 2001, Gibson-Graham *et al.* 2016, García-López *et al.* 2017) In extension, Erik Olin Wright (2019) argues that holding a collective identity is a main requirement for collective agency. Therefore, one consequence of a carsharing community with a collective identity is that it enables the exercise of collective agency within the local mobility system: "*The fact that [people] have joined together to coordinate their actions through an organization means that their actions now have a collective, not simply individual, character.*" (Wright 2019, p. 95) As the practice of non-commercial carsharing is rooted in everyday life, the collective agency is also exercised in everyday life, whereby it has the potential for opposing power in the everyday: (García-López *et al.* 2017)

> "*If modern forms of power are diffused throughout everyday life, the very construction of an oppositional collective identity is a political act. Put differently, if hegemony is a valid theory of power, the counter-hegemonic practice of forming oppositional collective identities is a genuine form of resistance.*" (Buechler 2000, p. 191)

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[25] I am aware that non-commercial carsharing cannot be called a social movement, however I contend that Buechler's argument is also valid for the case of smaller forms of counter-hegemonic organization.

Thence the building of community around practices of non-commercial carsharing and the emerging collective identity as carsharers open the possibility for locally changing everyday practices of automobility through collective agency. The methodological understanding of change I apply – the Transformational Model of Social Activity – sees collective agency as best suited to productively transform societal structures such as the system of automobility: *"It is not the relations between structures and individual agents that are important, but the relations between social structures and collective agents."* (Joseph 2002, p. 33, see also Collier 1994, Joseph 2003)

This primacy and importance of collectivity contrast with the concept of everyday resistance, which is genuinely focused on individuals and their actions outside formal organization. (Vinthagen and Johansson 2013, Johansson and Vinthagen 2016) In the discussion of this study I will argue that this results from omitting the relational and collective character of everyday life, from recognizing organization within certain power relations as a form of resistance in itself and therefore from a gap in the research on everyday resistance. (Cohen and Taylor 1978, Kaplan and Ross 1987, Lefebvre 2014, Martin *et al.* 2015, Murray and Doughty 2016) Yet, for now I will argue that even the concept of everyday resistance acknowledges that it is most effective when taken up by multiple actor collectively: *"It is when instances of dispersed [(everyday)] resistance spread and inspire followers to imitate or innovate that such individual resistance might have cumulative and large-scale political effects."* (Lilja and Vinthagen 2018, p. 216, see also Bayat 1997, 2000) Everyday resistance can thus learn from the concept of radical incrementalism brought forward by Pieterse as a "*disposition and sensibility that believes in deliberate actions of social transformation but through a multiplicity of processes and imaginations, none of which assumes or asserts a primary significance over other struggles.*" (2008, p. 6) This means that change, especially in cities of the Global North, doesn't only happen through overt resistance and actions but through many small actions and practices by small and local groups that come together and develop into "*deeper ruptures that accelerate tectonic shifts of the underlying logics of domination and what is considered possible.*" (ibid., p. 6) Pieterse argues that this requires an agenda that adheres to changing the underlying causes of issues instead of their appearances, e.g. car-dependence instead of only the combustion engine. Radical incrementalism gives an idea of how the subtle alteration of everyday practices by small and local groups, non-commercial carsharing in my case, potentially serves as vehicle for resistance within everyday life and ultimately bears the potential for a broader shift in the mobility system through changing the social relations of its reproduction.

Chapter Seven *Commoning mobility: Non-commercial carsharing and changing ownership*

In the fourth and last empirical chapter I discuss how non-commercial carsharing is influencing ownership relations. I already referred to this in other chapters as the root of some of the processes I so far described, wherefore changing ownership relations are a crucial aspect of non-commercial carsharing. First, I will theoretically pinpoint the importance of private car ownership as the lynchpin of the system of automobility and its relation to automotive emotions, sharing mobilities and broader mobility cultures. Second, in the first empirical section I argue that private car ownership is becoming inefficient in terms of money, usage and time spent caring for it. Therefore shared ownership and carsharing are gaining significant traction. I will show how shared ownership is intended, perceived and expressed in the carsharing associations and the private sharing arrangements and how shared ownership is enacted through a process of 'charging the car with community.' Third, the second empirical section interprets non-commercial carsharing as a process of commoning and discusses the presence of four aspects of it: commoning meaning, commoning movement, commoning practice and interrelated enclosures and boundaries. Finally, the discussion relates the empirical sections to the debate on sharing mobilities, discusses them with the analytical framework of redefining the political everyday, especially commoning and everyday resistance and thereby outlines their broader implications for mobility cultures and the mobility system in general.

1   Private car ownership: The lynchpin of automobility

I already discussed the significance of private car ownership in relation to personal status and its role as comment on citizenship. (Carrabine and Longhurst 2002, Kent 2015) Furthermore, many aspects of the system of automobility are inherently dependent on the private ownership of cars. (Urry 2007) The car certainly wouldn't be the second most expensive item of individual consumption. Additionally, the subordination of other modes of transport by the car on an individual level isn't dominant in the cases I looked at, challenging the hegemony of the car as mode of transport, which in its consequence also challenges automobility's hegemonic role in modern societies. Furthermore, I have shown in the last chapters, that also the ideational and ideological aspects of automobility – its individual and collective meanings – and the hybrid of the car-driver and the interrelated automobile subjectivities are differently expressed in the case of shared ownership of cars. Through practicing non-commercial carsharing the significance of private car ownership and the car in general is becoming more ambivalent and the meaning of the car as an object of utility, which is only used when necessary, gains more traction. For some carsharers taking care of a personally owned car is perceived as a burden, wherefore they were inclined to become part of a carsharing association or private arrangement, easing the coercive aspects of automobility. Furthermore,

non-commercial carsharers developed alternative automobile identities and subjectivities as 'carsharers', which embed the changed meanings of the car and automobility firmly in people's senses of self. All this is the case because the hegemonic position of automobility intimately depends on the private ownership of cars and the identities and subjectivities it provides:

> *"Individual ownership and exclusive, always-available use underpin the cultural significance of the car in automobility, signaled in the use of 'auto' to reference the autonomous self. Within the frame of automobility, the vehicle is exclusively used by one person, and underpins identification with what it means to be a person."* (Dowling *et al.* 2018, p. 13)

Thence, more generally I argue that the dominance of the car in everyday mobility and the wide-spread influence of the system of automobility is intrinsically connected to the private ownership and use of cars: "*Our social system revolves around having access to, being reliant upon, or even trying to avoid, the car; automobiles and capitalist society are highly intertwined.*" (Newman 2016, p. 55) In this context Newman describes private car ownership as part of capitalist ideology and the "*lynchpin of an entire mode of social organisation.*" (ibid., p. 55, see also Gorz 2009, Paterson 2007) Private car ownership promotes capitalist values of individualism and competition through solitary driving on the road, whereby "*car ownership is seen as a mark of personal achievement and thus driving is an expression of individual freedom."* (Newman 2016, p. 55) As discussed before also Paterson argues for this intrinsic connection between automobility, private car ownership and the capitalist mode of production. According to him the importance of ownership in modern societies is one of the main obstacles in shifting to more services, e.g. carsharing. The private ownership of cars thereby is one of the primary ways in which the hegemony of ownership is mediated: "*One of the principal obstacles to shifting business models from products to services is precisely the cultural attachment to ownership as a value in and of itself, which has been particularly strongly expressed in the West and increasingly globally through cars."* (Paterson 2007, p. 222) Together with automotive emotions favoring individual emotional attachments to cars to "*feel the car [and] feel through the car,"* (Sheller 2004, p. 228, see also Kent 2015) private car ownership is a vital part of a whole hegemonic culture of automobility. (Miller 2001a, Paterson 2007, Sheller 2012)

Hence, while I argued in the last chapters that non-commercial carsharing is altering everyday practices of automobility, I now want to specify this argument and contend that the changing ownership relations are one of the main causes for this shift in hegemonic practices of automobility. This shift is embedded in the wider trend of the sharing economy, however rather on its emancipatory than co-opted side. (Botsman and Rogers 2010, Martin 2016, Kesselring *et al.* 2020) I already discussed the shared ownership of the carsharing cars as the root of the feeling of responsibility towards the cars leading to their collective maintenance and collective management of the association. I will extend this and other arguments about private and shared car ownership made so far in the next sections to strengthen the argument that ultimately the different

ownership relations incorporated in non-commercial carsharing are challenging hegemonic practices and meanings of automobility at their root of private car ownership. I base this argument on the emerging debate on commons and commoning, which recently has been introduced to mobilities research. (Newman 2016, Sheller 2018, Nikolaeva *et al.* 2019)

Commons, commoning and mobilities

The commons have long been a neglected form of property and ownership relations in mainstream social science. Through the influential but deeply flawed article on the '*tragedy of the commons'* by Garrett Hardin (1968) common property and ownership became generally associated with inefficient and degrading use of ecosystems. However, Hardin's interpretation conflated common ownership with unregulated and free access and as an "*unavoidable consequence of individual rationality.*" (Aguilera-Klink 1994, p. 221) Therefore, since the 1990s strong efforts were made to uncover this flawed understanding of common ownership. (Ostrom 1990, Dietz 2003, Linebaugh 2008) Especially, Elinor Ostrom's work established that historically the commons, or common pool resources in her terms, were not unregulated or free-access resources but communally managed with strong collective regulations on their common use. (Ostrom 1990) She thereby established a third kind of ownership relations, besides private ownership and state ownership, common ownership, which is owned and managed by a community of users. (Turner 2017, Velicu and García-López 2018) Ostrom's work paved the way for a strong surge in research on common pool resources, especially in political sciences, political ecology, urban studies and geography. (Dietz 2003, Linebaugh 2008, Harvey 2012, Stavrides 2016, Turner 2017) Especially in political ecology and geography the commons literature was developed further towards a more processual and relational understanding of the commons as "*complex social and political ecologies which articulate particular socio-spatial practices, social relationships and forms of governance that underpin them to produce and reproduce them.*" (Chatterton 2010, p. 626) This conceptualization shifts the focus from localized and bounded common resources to the practices of commoning as "*dialectical webs of everyday practices through which people care for and (re)produce their ecological and social sustenance*" (García-López *et al.* 2017, p. 91) and to commoning as "*relational politics*" (Velicu and García-López 2018, p. 67) undertaken by the people who commonly own and manage the resources. (Linebaugh 2008, Harvey 2012, Chatterton 2016, Stavrides 2016) The commons and commoning literature usually takes an oppositional stance to private ownership relations that prevail in modern capitalist societies, as is becoming particularly visible in Harvey's account of commoning:

> "*At the heart of the practice of commoning lies the principle that the relation between the social group and that aspect of the environment being treated as a common shall be both collective and non-commodified-off-limits to the logic of market exchange and market valuations.*" (Harvey 2012, p. 73f, see also Stavrides 2016)

With the rise of the sharing economy and widespread digitalization of goods and services the commons have also been discussed in more mainstream literature, yet without discussing its theoretical incompatibility with individualized capitalist ownership regimes. (Rifkin 2014, Bradley and Pargman 2017) To a certain extent rightfully so, as the commons and commoning aren't only and necessarily subjugated, responsive and opposed to capital accumulation, but rather commoning is a *"contested process that seeks to expand shared rights and responsibilities within mixed property forms."* (Turner 2017, p. 798, see also Chatterton 2016, Velicu and García-López 2018) Thereby, they also produce new social relations, encourage creative approaches to sharing, shape *"new forms of social life, forms of life-in-common,"* (Stavrides 2016, p. 2) reconstitute *"our-selves as subjects in relations of power"* (Velicu and García-López 2018, p. 67) and perform *"(re)articulations of common(s) senses."* (García-López *et al.* 2017, p. 103) Applying this relational perspective on commoning first implies that *"counter-hegemonic commons are not found in a pre-defined ideological program but in performing differently in a constantly evolving process of openness, experimentation and solidarity."* (García-López *et al.* 2017, p. 103) Second, focusing on the practices of commoning allows to uncover the *"productive moments of resistance that create new vocabularies, solidarities, social and spatial practices and relations and repertoires of resistance."* (Chatterton 2010, p. 626) Thence, counter-hegemony is not an inherent part of commoning as such, but the "*everyday performances [of commoning] are precisely what prefigures and gives concrete meaning to the alternative commons senses that counter-hegemony requires."* (García-López *et al.* 2017, p. 103, see also Chatterton 2016, Velicu and García-López 2018)

In transport, mobility and mobilities research, commons and commoning have not been widely discussed so far. Nikolaeva (2016), Glover (2013, 2016) and Newman (2016) have been the first to introduce the commons literature into mobilities research on a theoretical level and in relation to automobility respectively: "*Cars must be made to work for people, the community; they should serve the common good and not be allowed to hold significant portions of the population back.*" (Newman 2016, p. 63) Mimi Sheller took this idea up in her book on mobility justice and advocates for a strengthening of the mobile commons for finding "*ways to undermine the uneven and differential mobilities that have fragmented, privatized, and militarized our bodies, streets, cities, infrastructure, nations, and planet."* (Sheller 2018, p. 162) She defines the mobile commons as *"enacted within shared practices of movement, momentary gatherings, and fleeting assembly, for a time, in a place, without owning it, so long as one does not ruin it, lay waste to it, degrade it, or take it away from the use of others."* (Sheller 2018, p. 169) In recent work, Nikolaeva *et al.* (2019) followed the shift of geography scholars from commons to commoning. They describe commoning as "*a set of processual relations through which something becomes common*" (ibid. p. 8) and emphasize three aspects of commoning mobility: commoning meaning, commoning movement and commoning practice. These provide lenses to look at how societal mobility regimes are reconfigured in socio-ecological ways and ultimately allow for a new politics of mobility transitions.

Amongst other implications the conceptual perspective of commoning mobility allows for a critical reassessment of sharing mobilities and their position in the struggle between neoliberal cooption and emancipatory social change. (Martin 2016, Freudendal-Pedersen and Kesselring 2018, Nikolaeva *et al.* 2019, Kesselring *et al.* 2020) Through the lenses of commoning meaning, commoning movement and commoning practice it is possible to distinguish between sharing mobilities that reproduce highly uneven forms of mobility and

"[sharing mobilities] that draw on the logics of commoning such as communal decision-making practices, openness to new forms of perceiving the right to mobility as well as the right to immobility (the right not to be displaced), the awareness of the social production of mobility and the power relations inherent in it, as well as a commitment to creating equity and working in the interest of the public good, contested as it may be." (Nikolaeva *et al.* 2019, p. 8)

I will come back to this distinction in the discussion and argue that the practices of non-commercial carsharing – collective rearticulation of the meaning of the car and automobility, shared car ownership and use and communal decision making – enable a rethinking of mobility as a commons and non-commercial carsharing as part of the process of commoning mobility. (Newman 2016, Nikolaeva *et al.* 2019)

The first section of this chapter discusses how private car ownership is becoming inefficient, how shared ownership is intended, perceived and expressed through non-commercial carsharing and enacted through charging the car with community. In the second section I argue that non-commercial carsharing should be understood as a process of commoning mobility through commoning meaning, movement and practice of mobility in interrelation with enclosures and boundaries. (Nikolaeva *et al.* 2019) Lastly, I will discuss these sections with my analytical framework of redefining the political everyday and outline its broader implications on processes of change.

2   Changing ownership relations

This section discusses three aspects of changing ownership relations through non-commercial carsharing. First, from the perspective of the carsharers the private ownership of cars is becoming inefficient in terms of money, usage and time spent caring for the car. Second, I describe how the carsharing cars are perceived as communally owned either by actual shared ownership or by its enactment through the shared usage of the same cars. Third, I show how shared ownership is the outcome of a process I call 'charging the car with community.'

2.1 The inefficiency of private car ownership

First I want to discuss how private car ownership is becoming inefficient for the carsharers I interviewed. I already briefly talked about financial and economic aspects of non-commercial carsharing. There I used them to argue that the reasons for practicing carsharing go beyond pure economic considerations, but also

already said they do play a role when joining and practicing non-commercial carsharing. In this sub-section I want to specify this role as privately owning a car becomes inefficient in terms of money, usage and time spent caring for it. Needless to say, the distinction between these three aspects is analytical and in the actual cases they are interrelated and fluid.

First, I will provide some examples of the economic inefficiency of the personal car. In our interview Jean-Paul and his wife are quite cost sensitive, especially regarding transportation and one of the main reasons for joining the association were the cheap prices for getting a car: "*When you have your own car, then in any case it actually always costs you more.*" (Jean-Paul, Grasbrunn) At first he and his wife had to get used to the price of taking a carsharing car for a two day trip, but Jean-Paul is convinced that this is evened out through all the many days they are not using it. He is aware of all the costs associated with owning the car, such as taxes, insurance, fuel, maintenance, security check, tires, etc. He thinks that the little bit extra reliability a personal car has compared to a carsharing car doesn't justify the costs attached to it, wherefore now he is very happy that carsharing "*probably spared me from a car.*" (Jean-Paul, Grasbrunn) Similarly, Helen sees a personal (second) car as an inefficient use of her money for transportation. She decided to join the association because she sometimes needs a car to pick up her son and also had to get used to the cost reality of carsharing. Yet, she doesn't think that she will pay more for carsharing than she would have to pay for a second car: "*I can drive by far more cost-effective with a carsharing car, when I don't need it daily to get to work, but once in a while as I do now.*" (Helen, Grafing) For Robert joining the carsharing cars was first a mainly monetary decision. After his car broke he had to spend money on moving to Markt Schwaben and didn't think that investing into a personal car was feasible nor efficient at that time as he could manage with rental cars and carsharing. Because this first inefficiency is closely related to the economic reasons for joining carsharing, I only want to provide one last example that is already connected to the second inefficiency of private car ownership. The main argument Erich is hearing against carsharing is that the spontaneity is getting lost. Slightly ironic he added his take on this argument: "*If today I realize, that I want to drive to South Tyrol, then I want to get into the car and drive. Well, then you take all the costs that you spent [on the car] in one year and say: 'I drove to South Tyrol. Once. Great.'*" (Erich, Grafing) Quite obviously Erich thinks that all the costs associated to a personal car aren't worth this one spontaneous trip, wherefore the personal car isn't only inefficient regarding the costs, but also regarding the actual usage.

This second inefficiency of the personal car, its actual usage, was prevalent amongst quite some carsharers as they have a relatively low necessity for using a car. Friedrich and his wife for example only drive at most 100 hours by car each year and the rest of the time their car is standing around: "*We need it so little, that it actually is stupid to own that car.*" (Family Schuster, Königsbrunn) It already happened to them twice that their battery was broken, when they wanted to use their car. Albeit their primary concern in relation to carsharing are the environmental benefits, this purpose and usage inefficiency of their personal car was an

additional reason for joining the carsharing association and test their future without a personal car. Similarly, James, Nancy and Murray had issues with their car usage and the resulting inefficiency of their personal cars. James owned a car for many years, yet it happened to him frequently that it was broken, because it was standing around:

> "I had phases where my car was standing around for three months outside without being used. And when I got in, the battery was empty. […] And of course the consequence was that I had defects all the time. I then had to go to the workshop albeit I didn't even drive, because the breaks weren't ok anymore."
> (James, Königsbrunn)

Now, after getting rid of his car and joining the carsharing association he is happy that he doesn't have a car anymore for which he is responsible and that only makes trouble.

Figure 7.1: The inefficiency of private car ownership: Parked cars, garages, concrete. A normal 'landscape' in Königsbrunn. Source: Author.

Also Nancy had experiences with an empty battery and rusting breaks and was told by a mechanic that "*a car is standing itself broken.*" (Mountain Hut) This made it clear for her that her usage of the car is completely inefficient and sharing her car with somebody leads to the car being used more often, whereby it is actually used more efficiently. But also independent of necessary repairs for some carsharers the car was inefficient due to their low usage. Murray and his wife are using the carsharing car twice a week, which is comparatively often. Still, their usage doesn't justify owning a personal car: "*Eight times [a month] and of that there are four trips in Erding. […] And for that having a car in the parking garage is stupid.*" (Murray, Erding)

The third inefficiency of owning a car is related to the time spent for maintaining a personal car. I already talked about this in terms of the burden of ownership. Most of the times this was expressed through the time that needs to be spent on choosing which car to buy, bringing the car to the workshop, getting the security

check, dealing with insurances, etc. Some carsharers felt that there is always something wrong with the car that needs to be dealt with: "*And you are stressed all the time. Then something doesn't work again, the wind shield has a stone chip, then you have to bring it somewhere, then you can't use it. […] So, time-effectiveness and also a cost-effectiveness.*" (Helen, Grafing) While it is apparent, that it isn't the saved time alone, that is relevant here, the stress relief through not owning a car becomes clearly visible. Also Jean-Paul, Raya, Simone and Martha described the time inefficiency in a similar way. For Jean-Paul deciding on which car to buy already takes more time than he wants to spend on it and he also sees the benefit of carsharing that the time-burden of ownership is shared amongst the members of the carsharing association. Raya was sick of having to spend time searching where she parked the car, as she couldn't remember after not using it for a while. The decision to start sharing a car with her neighbors was made when she had to drive around the neighborhood in a taxi and the remote door opener to find the car which was hidden behind a truck: "*At the end we drove around with a taxi to find the stupid car and then I thought: It's enough!*" (Raya) Overall, she said that she doesn't want to have a car, because she doesn't need it and that "*you had to take care of a car, changing tires, repairs and all that stuff…[carsharing] is a relief.*" (Raya) And also Simone describes carsharing as kind of a relief: "*I didn't have to care anymore. I always say, one lives more carefree. Because you never know when the next repair or some other bills are coming, that you are all rid of. You don't have to take care of anything, you just need to drive.*" (Simone, Freising) Even more drastic Martha thinks that all things that one owns but uses rarely are "*unnecessary baggage*" (Martha) that she wants to get rid of. Furthermore getting the shared car from her parents is also quite an effort for her, taking "*precious lifetime*" (Martha) from spending time with her family: "*The first requirement is do we really need it. And if we do, then we try to think what else we can do, so that there is quiet for a while.*" (Martha)

Many others, e.g. Ulrike, Frigga, Judith, Walter, Ivan, Clara and Rosa, live in similar situations, where their everyday life is structured in a way which only necessitates infrequent and little car use. Therefore owning a personal car means spending more money and/or time on something they don't need and use very often. As a consequence the private ownership of a car, the second biggest household expense for many people, is becoming inefficient cost-wise and time-wise. In mainstream economic terms, one could say that the cost-benefit-analysis of owning a car isn't justifying its private ownership anymore. (Andor *et al.* 2020) For my study it is not important, if this inefficiency is causing the decrease in the significance of the car as status symbol or if the decrease of the car as status symbol leads to car-poor everyday lives. Important is, however, that these two effects are co-occurring, wherefore carsharing and shared ownership are able to gain significant attractiveness and traction.

2.2 Intending, perceiving and expressing shared ownership

Already in my first interviews it became clear that in the carsharing associations and the private carsharing arrangements shared ownership is an important topic. Therefore, in this section I will discuss how

shared ownership is intended, perceived and expressed in the carsharing associations and private carsharing arrangements also as an outcome of the sense of community which developed amongst the carsharers: *"A group of people who perceive themselves as 'us' can have a collective sense of things that are 'ours.'"* (Verkuyten and Martinovic 2017, p. 5) I will first present the carsharing associations and continue with the private arrangements.

While not talking of shared ownership directly, Rosa told me that everybody has their favorite carsharing car and that her son knows them as "*our*" carsharing cars. And Rosa's son isn't the only one who thinks like that. And actually this feeling of shared ownership is not a coincidence, but is an inherent and intended part of the setup of the associations:

"Everybody pays the 600€ capital contribution. Of course, I can say 600€ capital contribution, I get that money back, it is a demand to the association. But when you communicate it in a way that you say, these cars are actually our cars. Those are not the cars of the association or some provider, but these are our cars." (Karl, Vaterstetten)

The legal form of the association was deliberately chosen because it is able to convey the communal character of carsharing the clearest, as the association isn't owned by anybody and doesn't make economic profit that is going into someone's bank account. The origins of the associations are in private carsharing arrangements, (Petersen 1995, Franke 2001) which grew so much that they needed a legal construct to serve as the owner of the cars, yet the cars are supposed to be owned collectively by the members of the association. This becomes particularly clear in the way the cars are financed. For example in Markt Schwaben, every time a new car is bought, the board is asking if any of the members are willing to lend money for the new purchase in an attempt to keep the financing as close to the members as possible. Likewise, in Erding Murray is making it clear to the members, that the carsharing cars are communally financed and owned through the membership fees and also Christa and her husband chose the association model specifically because of this communal ownership: "*With the association it is like: This is our capital and therefore everybody has to look after it and that seems to work quite well.*" (Family Schmidt, Anzing) Yet, some board members, amongst them Murray, are frustrated that not all members seem to get this communal ownership and supposedly think that the board "*should be happy that we pay our membership fee.*" (Murray, Erding) Therefore in our interview he raised the question if *"the normal user also sees it that way, this is our car, this is my car, it belongs to the user."* (Murray, Erding) At the time of our interview I wasn't able to answer this question, but now I can say that for quite some of the members I talked to, but not for all, the cars are perceived as shared property.

Jean-Paul, for whom the association mainly provides a service, nevertheless referred to the carsharing car as their car: *"It is somehow a bit like our car, just that we can't use it every time, but most of the times when we want to use it, we can use it. […] It is somehow our car just that it isn't."* (Jean-Paul, Grasbrunn) Also

Henri kept referring to the carsharing car in front of his door as "*our car.*" (Henri, Grafing) He generally treats carsharing as having his own car. Further, he doesn't want to bother his friends with not having a car and hence uses carsharing when he feels like he needs a car. Sometimes people tell him that they could never life without a car, for which his "*logical response is: 'I also don't live without a car, it just isn't my own.'…Albeit, well, somehow it is also my own. I am a member of the association which owns the cars, so I own one two-hundredth of fourteen cars.*" (Henri, Grafing) Likewise, Clara is frequently confronted with people who don't want her to rent a carsharing car for trips or visits, in which case she always makes it clear that for her getting a carsharing car isn't different to them taking their car out of the garage. She feels like the carsharing cars become her cars, especially after being on vacation with one for three weeks: "*You bogart it to a certain extent…and well I think it is encroaching, because of course we only own one three-hundredth of each car.*" (Clara, Vaterstetten) Thus, the shared ownership is not only fully realized, but even developed into a full feeling of private ownership through experiences that she shares with the car. Nevertheless, Clara also told me that she isn't experienced with car-related things, such as repairs and rules, as owners of personal cars are, clearly marking the difference between shared and private car ownership.

Also Ulrike bogarts the shared cars for herself and has to correct herself when talking about her membership in the association and her feeling of responsibility towards the carsharing cars: "*I own, well…I co-own these cars.*" (Ulrike, Grafing) Another example is Erich, who is getting rid of his car and is becoming a car-warden for one of the carsharing cars. In this role he has to take care of the car "*as if you have your own car.*" (Erich, Grafing) At the beginning of the interview this step of getting rid of his car due to carsharing was "*an opportunity or a way that you could even think about, how it would be without a car, well, without a personal car.*" (Erich, Grafing) But throughout our interview he made multiple statements, that while they still have their own car they have one and a half cars and after their personal car is gone, they "*theoretically will even have two cars*" (Erich, Grafing): the carsharing car in front of their door and the carsharing car their neighbor is taking care of. So step by step he took full ownership not only of the carsharing car he is taking care of as a warden, but also of the carsharing car next door, that has been half their car all along. Also thoroughly taking ownership of the carsharing cars is Antonio when he said: "*Well, I have eight cars available. Nine, with the one of my wife!*" (Antonio, Markt Schwaben) Lastly, James told me about a discussion he had with a friend who didn't think that getting rid of his car is a good idea: "*She didn't want to understand that this is better and wiser for me. […] I could never rely on my car, that it actually is ready. Now I have cars!*" (James, Königsbrunn) As already said, carsharing is a considerably improvement for James's availability of a car. However, in relation to other people's valuation and the hegemony of private car ownership, carsharing still creates friction and a lack of understanding. Thus, it is clear that in the carsharing associations there are many people who perceive the carsharing cars as their cars, while acknowledging them as ultimately collectively owned. While on one side this is answering Murray question in a positive way, it also shows how,

at least amongst the people I interviewed, shared ownership still is interrelated with an understanding of ownership as a private right and feeling an individual has towards a thing, even if it is owned collectively. (Verkuyten and Martinovic 2017)

Overall, in the carsharing associations the shared ownership is intended by design and structure resulting in a broadly spread perception of the cars as owned collectively. This is however expressed differently to a certain extent as the car is 'ours', 'mine', 'not my own' or 'like my own' or a mix of these. Shared ownership then is more than the formal setup of the association, but also becomes established over time through shared usage.

A feeling of shared ownership wasn't only present amongst the carsharers in the carsharing associations. Also in the private sharing arrangements the cars were perceived as commonly owned or even bought together. When buying a car together the shared ownership is quite apparent, for example with Raya, who bought several cars together with the neighbors she was privately sharing. In the case of shared ownership it is particularly important to decide who can use the shared car when in order to avoid conflicts over the usage rights. (Snare 1972, Meinzen-Dick and Pradhan 2002, Verkuyten and Martinovic 2017) Especially in the case of actually shared ownership it is particularly important to decide on defined usage rights of the shared car. Yet, in all cases the development and regulation of shared ownership was enabled by establishing rules for the shared ownership and use of the cars. I will provide some examples of such rules for regulation ownership and usage and come back to this topic when talking about commoning practices of mobility.

For the group sharing Karl-Theodor it was important to have their own car for two reasons. First, sharing a car privately is some kind of cool project that they are doing as a group. Second, they wanted to be independent from carsharing services in order to have more flexibility in using and accessing the car to go on weekend trips and make vacations also for a longer period of time:

Cinzia: *"That also was the idea that you can go on vacation with it…"*

Tariq: *"Vacation car, leisure car, right."*

Cinzia: *"…just be gone, exactly the way you want it right now."*

Luca: *"This means, owning your own somehow still plays a role for you?"* [Everybody nods]

Cinzia: *"Well, a bit our own…"*

Tariq: *"A quarter!"* (Karl-Theodor)

Thence, the increased availability of and flexibility in using the shared car is a decisive difference between private sharing arrangements and the carsharing associations. While availability and flexibility are higher, rules on who uses the car at what time need to be agreed upon. In the case of Karl-Theodor the sharing group each paid a quarter of the price and now each of them owns a quarter of the car. In order to not get into conflicts about the usage they decided to alternate the primary usage rights:

"Eventually we divided it in a way, because of our [camping van], that we have it in the winter months and that we are so to say the owners of the car. And in the summer months the car goes to the other two and they are the owners. But you can still lend the car to each other always or even to completely other people." (Karl-Theodor)

Apart from dividing usage rights, also other things were regulated in the private sharing arrangements, e.g. the costs. Walter and the people he shared a car with bought a car together at a later stage of their sharing arrangement. But already from the beginning it was clear that they own the car collectively, wherefore they also share the fixed costs of the car: "*Who is driving a lot also has to pay a bit more. But on the other side we own the car together, so we have certain fixed costs.*" (Walter) Mimi, Ellen And August didn't buy the shared camping van together. Yet, when they started sharing the camping van and every time a new person joined the agreement they had to buy their respective share of the camping van. In addition, they also share the fixed costs of taxes, insurance, etc. equally. In addition to the bus they also share camping equipment for the bus, such as chairs, a table, and an awning. Some of this was bought together while other things are long-term borrowings for communal use with the bus. For using the camping van, there is a usage fee per kilometer that is calculated with a driver's logbook and they agree on the usage rights collectively through a shared online calendar. Apart from this 'buying oneself in', they told me that also the attitude with which they went into the agreement was very important for its success: "*When something happens, then it happens. And nobody has big fears or how you want to say...this kind of claim of ownership or something. And that I think was also the factor that made it possible in the first place.*" (Camper) Therefore, the possibility of shared ownership also relates to the non-existence of private ownership claims, at least in the private sharing arrangements. Thus overall, the shared ownership of the bus and the equipment developed over time, enabled by a lack of private ownership claims and became institutionalized through buying oneself into the arrangement and sharing the costs of ownership equally.

In most other cases the shared car wasn't bought together, wherefore theoretically it was clear who the owner of the car is and thereby theoretically has the primary usage rights. In the case of Selma this lead to the agreement, that she and her husband have the primary usage right when there is a conflict, especially in the holidays. As their arrangement was still in the planning phase during the time of our interview, I cannot say how this influenced the felt ownership of the car for their neighbors. However, in the case of Beverly, this clear definition of ownership didn't hinder the development of a feeling of ownership. During our interview she told me that she went to Italy with the shared car and had many interesting experiences with it. When I then asked her if the car somehow became a bit like her own car she said: "*Yes, of course. So this one, I am driving it for such a long time, where I say, after that long time...*" (Beverly) And albeit she never invested specifically into the car, thereby buying herself in, she did pay for some repairs and changing tires, which strengthens this feeling of ownership. The last example I want to provide is Karin who isn't sharing a

car but a cargobike with her neighbors. The cargobike belongs to her neighbors, wherefore they also have the primary usage right and she would also immediately accept if they terminate the agreement. However, towards other people she is treating the cargobike as her own: *"Actually, I don't think people know that we, they just assume we have one…but no one is really…we haven't thought to tell people, we are just like, this is our cargobike. I mean it is not…like I don't know, it is funny, huh?"* (Karin) In her case it is particularly visible how a feeling of ownership can develop over time even if there was no 'buy-in' or agreement on shared ownership but just through shared usage.

Thence, while the pathways to shared ownership are more diverse in the private sharing arrangements, they eventually have the same effect as in the carsharing associations. In the private sharing arrangements the shared ownership can be established from the beginning by buying a car together. It can further be actively fostered through buying oneself into an arrangement and by equally sharing the fixed costs of ownership. But even without any of these a sense of ownership can develop through frequent usage of the shared object. Although this last form isn't articulated as shared ownership and formally also isn't shared ownership, there are multiple people claiming ownership of the shared vehicle, whereby a sense of shared ownership is perceived, constructed, expressed and enacted. In both, private carsharing arrangements and carsharing associations, shared ownership then isn't only a formal agreement, but also gradually enacted informally through regulating the shared use of the same shared vehicle. (Richardson 2015)

2.3 Charging the car with community: Enacting shared ownership through collective care

Therefore, I want to go more into detail of this process of enactment, which I call 'charging the car with community'. This process is rooted in some of the aspects I discussed in the chapter about community, e.g. the feelings of community, responsibility and trust, the voluntary engagement and the car as connecting element. Yet, I will complement them with discussing the emergence of new automotive emotions and the development of shared care for the car, in order to look at them specifically as enacting shared ownership. Importantly, this isn't a one-way process: *"A sense of attachment or group identification does not have to imply a feeling of collective ownership, but collective ownership does imply a sense of "us" and social identification."* (Verkuyten and Martinovic 2017, p. 5) Thus, collective ownership and the sense of community rather need to be understood as interlinked and interrelated.

Generally, non-commercial carsharing is seen as being able to work against anonymity and foster human encounters: *"I think, that it could work against this anonymity and could again bring more exchange amongst people. […] At the end there could be more encounters between people, when you get the networking right."* (Hannah, Grafing) This is enabled by people using the carsharing cars together, shared activities amongst the members, increased communication between carsharers and voluntary engagement in the association. I already discussed this in detail in the chapter on community, wherefore I will just recount them briefly. Examples for shared usage are Antonio who is using the 9-seater van with a befriended family for vacations,

Mimi, Ellen and August who are doing trips to the recycling center together or Nancy who is driven by her fellow sharer to the mountain hut she is working at for two hours. I also described shared activities at length, such as the cleaning parties, the regular's tables, the member assemblies or the New Year gatherings. Also the voluntary engagement by many members as car wardens, board members, for public relations and at cleaning parties is part of the process of charging the cars with community. Increased communication was particularly prevalent in private carsharing arrangements, for example Walter who coordinated his free time planning with that of the other sharers or Ivan for whom the shared car became a frequent topic during shared dinners and was a reason to communicate again after family quarrels. Overall, this lead to "*an understanding for the mobility needs, or automobility needs, of the others. […] Patterns developed and were saved into the users brains,*" (Ivan) enabling stronger social bonds which become materialized in and enacted through charging the car with community and shared ownership.

In addition to the already mentioned aspects, I discuss two additional ways of how charging the car with community takes place and also show how some carsharers are actively aware of this process. First, the cars are charged with community is through an extension of the feeling of community beyond the own association to carsharing in general. For example, since David joined the carsharing association in Königsbrunn he is recognizing other carsharing cars on the street, through number plates, stickers and designated parking spaces, making him generally more aware of carsharing and giving him the feeling of being part of a growing movement. More concrete, for Robert the community is materialized in using the same cars and seeing other people driving them: "*You see other people with the same cars and somehow, somehow you have a…well, we are part of a community. Well, you maybe don't meet them, but I don't know, maybe you meet them in the garage. […] I think you feel like being part of something.*" (Robert, Markt Schwaben) And every time he sees one of the cars he is reminded that he is part of this community. (Freudendal-Pedersen 2015) The second and strongest expression of charging the car with, however, is the development of new automotive emotions and feelings of collective care.

Automotive emotions and care: Feeling with and caring for the shared car

The emotional aspects of automobility that make the car a personal and private space which is felt as object, felt through and felt with were so far mostly researched in relation to privately owned cars and established how they can be said to be "*deeply embedded in ways of life, networks of friendship and sociality, and moral commitments to family and care for others.*" (Sheller 2004, p. 236) For example many car-drivers 'feel' the car in reverse parking, knowing its contours as if they were their own body or a second skin. (Thrift 2004) The car also allows the individual experience and pleasure of speed and acceleration, while also providing the basis for aggressive road rage and the fear of a car crash and an exclusive individual space that allows for comfort and the freedom to make phone calls between work and home, to listen to music or audiobooks or to simply relax in a personal 'cocoon.' (Miller 2001a, Kent 2015, Wells and Xenias 2015)

Additionally people tend to feel with their car while it is aging and eventually breaking, whereby the car is humanized to a certain extent and potentially becomes an integral part of families and friendships. Last but not least, the car is an important space for sociality, e.g. during road trips, cruising around, as family space in everyday life and during vacations. (Sheller 2004, Collin-Lange 2013, 2014) The question then arises how automotive emotions are affected by changing ownership relations and I will argue that while some automotive emotions are shifting, shared ownership by large allows for feelings of collective care to develop, enacting, enabling and strengthening shared ownership.

One could assume that through shared ownership the personal investment that people have in the shared car(s) is also decreasing. This definitely can be said in regard to the visual appearance of the carsharing cars, as small scratches and dents tend to be left in the cars. While carsharers still care about the function of the shared car, many claim to not have feelings for their own or the shared cars: *"Well, it is not something, how should I say…well we don't fulfill our dreams with the car. We also don't have this, how should I say…There are these feelings, that many people [show] towards the car, freedom, status symbol, all these emotions…No, that I wouldn't say."* (Selma) Nevertheless, while many carsharers didn't develop positive emotions towards the car, multiple interviewees developed negative emotions towards it as they were irritated when getting into the car, having to adapt to different cars every time and sometimes have to look into the manual of the respective car. Before moving to Vaterstetten Hannah owned a private car and was a regular driver, however now she told me that after a longer break from driving she always has to orient herself with the actual practice of driving a car or find the ignition, indicators or lights. Additionally, quite a few interviewees didn't like driving a car due to increasing traffic, the stress associated with it and the lifetime that is lost while driving. Thence, the car loses some of its affective aspects due to carsharing and decreasing car use, especially in relation to feeling the car as material object and the fun of driving. (Miller 2001a, Thrift 2004)

However, interestingly and to my own surprise, also a shared car still acts as basis and carrier of emotions. The probably best example for this is Karl-Theodor. When the group of friends decided to buy, own and use a car together their first and most important rule was to not develop feelings for their car:

"It shouldn't be something that we think is extremely awesome, so that it also isn't bad when something breaks. So that it really is an object of utility and that was the first rule when buying a car: It shouldn't be a car where feelings play a role. […] Initially we also agreed, that you have to pay a five Euro fine into the car cashbox, when you secretly develop love. I don't know if anybody every paid the five Euros…" (Karl-Theodor)

As this was one of my early interviews I was surprised and intrigued by this clear statement and briefly afterwards asked if they now developed feelings for the car or not, which caused great laughter amongst the group and the confession that Karl-Theodor became a cherished part of the group. They send around videos

of him being in the washing street or on a day trip, were sad when Karl-Theodor got his first scratch and paid great attention to be able to use Karl-Theodor as a group for common trips. Therefore, through the shared activities of his owners and the personal attachment the group developed to him, he is charged as an emotional object signifying their friendship that is collectively taken care off.

My attention to this issue was however already raised in my very first interview with Rosa. There she told me that in her association in Markt Schwaben she experienced that many people build up some kind of emotional relationship with the carsharing cars. When they had to replace their first 9-seater van because it was too old the members were sad because many connected a lot of positive experiences to it: "*When we sold our first bus because it was broken, there was a lot of crying. It was really funny: 'Oooh, the bus has to go, but I had so many holiday trips with it, went hiking…' There was a real feeling of nostalgia.*" (Rosa, Markt Schwaben) She also experienced this with other cars, which makes her conclude that each member somehow has their favorite car to which they have a special connection. Clara described this personal relationship to the carsharing cars more in detail, while she recounted how the car they do their vacation with becomes close to them:

> "*That changes every so and so years and yet there are connotations or there are holiday pictures where the car is on. Where you then say, look do you remember when we had this car and do you remember when we had that car, because the other one was broken…[…] With every experience that you associate with the car and be it a scratch that you drove into it, it is a bit of experiencing [the car].*" (Clara, Vaterstetten)

Also Clara told me that her kids recognize the carsharing cars on the street and declare them as 'our carsharing car'. Likewise, Helen's son developed a relation to the carsharing car they use most in Grafing. As hybrid car it features a large screen in the front which shows the electricity flow or the rear view when driving backwards. He quickly figured out how to control the screen and is excited to drive in 'the red car' as he can investigate the functions of the car and 'watch television' when they are driving backwards. Thence, even as the shared car is not personally owned, through experiencing the car in social situations the car nevertheless becomes emotionally charged with memories and meanings, fostering the development of feelings of ownership.

As can be seen in the case of Karl-Theodor the humanizing and personalizing aspects of automotive emotions can remain, albeit Karl-Theodor is definitely the extreme case in my sample, as nobody else gave their shared car a name, or at least didn't tell me. Still, Nancy and Sh. described their driving style as very defensive, because they know that "*it somehow is a little lovely raw egg this car.*" (Mountain Hut) The car they share runs on natural gas and has a malfunctioning in the electronics, wherefore they always take the battery off when they don't use the car, implying that it requires a lot of care from its owners. Nancy told me multiple stories about bringing the car to the workshop to have it repaired and also compared owning a car

to having a kid or a dog, because when she was looking for a flat she always had to keep in mind that she requires a parking space. It is evident how this lead to a relationship of care for the car and an emotional investment into its wellbeing. Similarly, one can describe the relationship of care that Mimi, Ellen and August have to their camping bus. Because of the "*diseases of aging*" (Camper) they don't borrow the bus anymore to people outside of the arrangement, as they think it is too fragile to be handled by people who are not used to the bus. They also had to invest quite some money and time into repairs and even made repairs themselves with the help of friends. At multiple times in our interview their favorite things about the bus came up: the fridge, which is fragile but great and the motor which is reliable and made for eternity. Furthermore, they are frequently thinking about what the next repair might be, what they would do if the bus breaks and feel themselves dependent on each other and on the bus as vacation vehicle. Thence, through shared ownership an emotional relationship of care doesn't only persist, but actually becomes a collective relationship of care, most distinctly in the private sharing arrangements. Considering that a smaller group is sharing a single vehicle it is more likely that feelings of care develop for the car – also because the ownership relation is closer to individual ownership. But also in the carsharing associations the responsibility of the members for the carsharing cars, which develops over time is a clear sign for a relationship of care.

Thence, the shared ownership causes a shifting of automotive emotions from individually 'feeling the car' to collectively caring for the shared car, charging it with a feeling of community. Automobility is experienced less through the bodily sensation of driving, wherefore automotive emotions become focused on feeling with and for the car through collective care and responsibility. While, in private carsharing arrangements the personalization and humanization of the shared car can remain strongly present, as cars are given names, develop a personality and age with time, in the associations the shared cars become personalized and charged with memories through frequent and long-term usage, whereby feelings of responsibility emerge. In both cases the shifted automotive emotions enable a collective relationship of care for the shared cars.

A final point I want to make, is that amongst the carsharers I interviewed there were people who were specifically aware of carsharing enabling this process of charging the car with community through shared ownership and use. Actually two people referred to the philosopher Erich Fromm and a book he wrote '*To Have or to Be'*. (Fromm 1976) According to Elmar and Murray, Fromm argues in that book that greed and envy pushes people in the direction of 'to have' and that 'to be' is a better way for people to live together. For both, sharing in general and carsharing in particular is perceived as a step towards 'being' intrinsically connected with a more community oriented way of living. (Botsman and Rogers 2010, McLaren and Agyemann 2015, Richardson 2015) While, carsharing allowed Murray and his wife to *"free ourselves from something"* (Murray, Erding) on their ongoing effort to less 'having', Elmar, who is regularly giving talks on the energy and transport transition, makes this connection between carsharing and community directly

explicit: *"I tell people: 'You get something back, when you give up 'having', the 'having alone'. Through sharing you again become part of a social community.'"* (Elmar, Grafing) Therefore, in the next section I interpret non-commercial carsharing and shared ownership as a way of commoning mobility, where this process of 'charging the car with community' is an essential part of.

In this section I described how actual and perceived shared ownership of cars and their enactment are an integral part of non-commercial carsharing. First, I showed how private car ownership is becoming inefficient in terms of money, usage and time. Together with the demise of the car as status symbol, shared ownership of cars 'makes sense' and becomes socially accepted, wherefore it can more easily gain traction. Second, I described shared ownership in the carsharing associations and private arrangements. In the carsharing associations shared ownership is supported by design, shared activities and organizational structure. The perception of shared ownership is therefore quite common amongst members, but still interrelated with meanings of private ownership. In the private arrangements shared ownership in some instances was formally established through buying a car together or buying oneself into the arrangement. However, there were also cases in which shared ownership wasn't formally established, but nevertheless a sense of shared ownership developed for the non-official owners of the car. In both cases shared ownership was more than a formal agreement or simple design, but was supported, established and enacted through a process of 'charging the car with community' and feelings of collective care as a form of commoning mobility.

3   Non-commercial carsharing as process of commoning mobility

Abstracting from shared ownership relations and the process of 'charging the car with community', in this section I will view non-commercial carsharing through the perspective of the commons and commoning literature introduced above. I will first generally argue for non-commercial carsharing as a process of commoning and then discuss the presence of the four elements of commoning mobility in non-commercial carsharing: commoning meaning, commoning movement and commoning practice and interrelated enclosures and boundaries. (Nikolaeva *et al.* 2019)

3.1 Our mobility association

A relatively obvious aspect of commons and commoning is the existence of a group of people that commonly owns and manages the common resource, in my case cars. (Ostrom 1990, García-López *et al.* 2017, Velicu and García-López 2018) Especially in the carsharing associations this was strongly present in the way the members talked about the association and the cars. As already described the cars are widely perceived as shared property through the financial involvement in the association and the frequent use of the cars. The cars thereby are perceived as 'our' cars, but also the construct of the association itself becomes understood as a communal entity, by referring to 'our' association and to the members as 'us' and 'we'.

Frigga is a good example for this as she regards the first introduction of a car with automatic gears as a communal failure, instead of each individual not being able to handle it: *"The first one we had, it had…it was sold now…it got a lot of bumps. At that point nobody was able to drive with automatic gears. […] We didn't even had it repaired anymore because there was so much."* (Frigga, Markt Schwaben) Furthermore, she was also frequently referring to 'our' association and decisions that 'we' have to make, e.g. in relation to the purchase of an electric car or the jubilee of the association: *"For the 20 year jubilee we organized a motorcade with all the cars. […] Through that we gained a lot of new members. This year we have our 25 year jubilee celebration."* (Frigga, Markt Schwaben) Also Bob, Simone, Erich, Murray, Maxim, Antonio, Henri and many others share this perception of the association as a collective 'we': *"Our carsharing association started with two people, who shared one car. And now we are 200 members and have 14 cars."* (Henri, Grafing) I already went into great detail of this in the chapter on community and it even is also written into the statute of the associations: *"The purpose of the association should especially be reached through the organization of the <u>collective</u> use of cars."* (Carsharing Erding e.V. 2015, p. 1, emphasis added)

But it is not only cars that are shared in the carsharing associations. Since many years most associations also share public transport passes from the local public transport provider: *"We also share IsarCards. I think, at the moment we have nine. This is used a lot!"* (Henri, Grafing) These cards can also be booked through the booking system and are owned and used collectively. The intention behind the cards is to provide an alternative to using the carsharing car for the association members, e.g. for the kids who cannot yet drive, in case all cars are booked or to save on transportation costs for occasional public transport trips: "*It is very consciously supported with the MVV-cards that there also is an alternative to the car."* (Family Schmidt, Anzing) As a consequence some members cover all of their motorized mobility needs through the association: *"We now don't have a car at all and only use the carsharing car. Works. We don't need a car in the area around Munich. The rest is covered with the transport passes with the suburban trains."* (Frigga, Markt Schwaben) Also Clara and her husband use the carsharing association "*for everything that we don't drive by bike.*" (Clara, Vaterstetten) While on one side for Clara this is simply a practical replacement for the bicycle in case of bad weather, on the other side she thinks the public transport passes are very important to allow mobility also for people who don't have a driver's license, especially kids. She, and others, also told me that they use the public transport passes in addition to their own passes when they have visitors. So through the public transport passes the carsharing association actually becomes a mobility association and for quite some members all their motorized mobility becomes commonly managed.

But what makes this collectively perceived mobility association an example of commoning mobility? Harvey suggests that on a local level commoning takes place when externality effects are organized and captured and *"some aspect of the environment [is put] outside the market."* (Harvey 2012, p. 79) Following this rather simple definition the carsharing associations should clearly be considered a form of commoning

mobility. The cars of the carsharing associations are usually not accessible for non-members, at least not for the same price conditions, wherefore they are not part of the market anymore. More generally access to a car is not based on the purchase of a car anymore but on becoming part of a community, whereby the externality effects of the system of automobility are captured and organized in a way to benefit the members of the association. (Harvey 2012) Nikolaeva *et al.* go a bit further in their definition of commoning mobility as referring to undertakings that *"propose a reconsideration of the value of mobility and its collective repercussions in addition to the communal management of transport."* (2019, p. 11) Therefore, in addition to what I already described as shared ownership and what Harvey describes as taking something out of the market, commoning mobility entails rethinking mobility from individual freedom to a collectively owned and governed good that connects diverse communities.

The next subsections will explore how non-commercial carsharing is rethinking mobility as a practice of commoning along the four aspects of meaning, movement, practice and the enclosures and boundaries this entails. Before, there are two general points that I want to make. First, the four above aspects need to be understood as entangled and interrelated. Commoning movement, meaning and practice often co-occur with and depend on each other and the practice of commoning is intrinsically related to parallel enclosures and boundaries. (Nikolaeva *et al.* 2019) Therefore the distinctions drawn are often more analytical than practical. Second, commoning mobility "*is not a totalising or discrete process, rather it is a process that exhibits governance and practice-based transformations.*" (Nikolaeva *et al.* 2019, p. 9) This means, that ultimately commoning mobility is not a goal that can either be reached or not. On the contrary, it needs to be understood as a process that is always ongoing and necessarily incomplete, which however enables a more democratic engagement with mobility. (Turner 2017)

This is also why I have so far excluded the private sharing arrangements on the last pages. For these it is impossible and particularly pointless to assess whether these generally are mobile commons or not as each case differs from the other quite extensively. Yet, each of the four aspects that I will discuss are present within the private sharing arrangements making them part of the ongoing process of commoning mobility.

3.2 Commoning the meaning of mobility

The first aspect that I want to explore is the commoning of meaning, which is the *"collective reconsidering of the societal value of mobility. […] Commoning the meaning of mobility happens when a social actor or actors actively push to rethink the social impacts of movement, its representations, or the meaning of relationships on the move."* (Nikolaeva *et al.* 2019, p. 9) First, I want to recall the aspects I already talked about in earlier instances. Previously, I described how the meaning of mobility in general and automobility in specific is shifting from freedom and status symbol to necessity and object of utility: "*I just use the car to use it.*" (Maxim, Grafing) I discussed how this is connected to the actual practices of non-commercial carsharing – having to book a car in advance and an awareness of the real costs of driving a car. I also already

mentioned that the association is a way for low-income households to get access to a car, whereby the association is ameliorating one of the social impacts of automobility. Yet, there are some additional aspects of commoning meaning that I want to go further into. For example when the first associations started, it required a dedicated group of people to actively push for changing the dominant perception of mobility and its relation to the private car. In times without internet pushing for a shift to carsharing meant a lot of personal convincing efforts, because carsharing actually was tedious. When one person wanted to use the car, they had to call all other carsharers to book the car. Nevertheless, the relentless push of the initial founders of the carsharing associations was successful and ultimately lead to reconsider the meaning of automobility not as normal and comfortable but as something for special occasions. This was also stressed by David, Antonio and Rosa. David described carsharing as an opportunity to use a car without owning one, wherefore it is a possibility to change the meaning and representation of mobility in relation to the private car. Antonio and Rosa both emphasized how difficult it is for people to give up their private car: *"Because giving up the private car…that is a huge step for people who had one their whole life."* (Antonio, Markt Schwaben) Therefore carsharing allows to rethink the meaning of automobility and mobility in general from *"I have my own car, mine, [to] when I need one, I take one."* (Rosa, Markt Schwaben) Furthermore in the associations it is discussed in how far the sharing could be extended to more than cars and public transport passes, but also how the cars can serve the member's needs best: *"And there is thinking about, on the association level, if you could also [share] other things, for example to get some e-bikes. […] Or that a different car is bought. […] There is attention that everything is used in a sensible way."* (Ulrike, Grafing) Thereby the societal value of mobility as a need to connect people and transport goods is acknowledged and the best means are collectively sought to serve this need. This makes carsharing into a *"convivial tool, […] a tool that works for you, a tool with which you can work"* (Ivan) to cater mobility needs, instead of a *"radical monopoly"* (Ivan) of automobility. (Illich 1975)

According to Robert carsharing can also have broader impacts on the meaning of relationships on the move. I already described how carsharing made his life less stressful, due to not commuting by car anymore. He is convinced that carsharing can help in making people more flexible and less annoyed in their everyday life. For example, carsharers need to adapt to changing cars, have to adjust the car each time they take it and also take public transport more often: *"I think that, many people who always have a car already have problems when they have to socialize with other people. Or just these changes, reacting to changes, they are always annoyed, when something isn't the way they always do it."* (Robert, Markt Schwaben) Thence carsharing can not only make a personal life less stressful but also bears the potential of enabling more sociable relationships on the move. Yet, non-commercial carsharing is allowing to rethink social relations of movement even more generally: *"We have to depart from this individual, everybody has their thing. One person, three meters, two meters long, one ton heavy, that is…well…when I drive out and sit alone in the car*

I feel stupid." (Hannah, Grafing) Being a member of the carsharing association made Hannah rethink what it means to sit alone in a car for the broader society and how this is related to broader societal preferences for individual lifestyles. Likewise, Helen and Elmar told me how they are sharing more since they joined the carsharing association. In the few occasions that Helen can't get a carsharing car she is asking her neighbor for her car, which *"isn't an issue at all."* (Helen, Grafing) Considering how for many people their car is a very personal space, this is a considerable rethinking of the meaning of the representation of the private car. And also Elmar can trust on his neighbors to help him out in case he urgently needs a car and there is no carsharing car available: *"The so called shortage case everybody is scared of, we can solve through active and lively neighborhood help."* (Elmar, Grafing) I can't show if carsharing or helping amongst neighbors came first, the outcome nevertheless is that the meaning of mobility in relation to the personal car is collectively rethought. This can also be seen in people using the carsharing cars together and even buying a shared car together in order to be able to use it together: "*That you can use [the car] together as well. Not that you alone go back and forth, but it is a communal leisure car. We also paid attention that there is enough space in the trunk.*" (Karl-Theodor) Thereby, as already described, the car can become a project associated with communal events, like changing tires and derusting, but can even become part of the group: *"We have a new group member, Karl Theodor. [...] It is another shared thing again and you...with the shared WhatsApp group and you send around videos, when you are in the car wash with Karl-Theodor."* (Karl-Theodor)

Taking these points together and connecting them with the social re-embedding of automobility through non-commercial carsharing, the meaning of mobility is collectively reconsidered from individual freedom to a shared good through taking into account the social impact of automobility (access to a car for low-income households), rethinking the representations of the car (personal ownership to shared ownership) and altering relationships on the move (less annoyance and less individual movement).

3.3 Commoning movement

The second aspect is the commoning of movement, which "*refers to collective engagement with the amount of movement across space."* (Nikolaeva *et al.* 2019, p. 9) I already described how many of the carsharers are infrequent car-users, which is also intended by how the association is set up:

> *"We want to change mobility. We don't want that people drive with our cars as much as they would with another one. We also don't want that people drive a lot with our cars. We have to get the most out of our cars, need to provide the right cars in the right amount. But it is not our goal that people drive a lot. We of course want to gain more people, who then also drive and so on, but we don't want that the individual drives a lot."* (Karl, Vaterstetten)

This intention is mirrored by Rosa, who nevertheless finds it difficult to find the right amount of movement and told me about associations who have problems with too low car usage: *"On one side we want to be environmentally friendly, on the other side the association only works when the cars are actually use."*

(Rosa, Markt Schwaben) The actual amount of movement undertaken by the members of the associations then is the outcome of the collective decision on how many cars and public transport passes to provide to the members, but also on how the goals of the associations, collective car usage and environmental impact reduction are communicated.

The actual effect of reduced car usage by most association members and private carsharers was already described in previous chapters, wherefore I won't describe and discuss this again, but it obviously is the most important expression of commoning movement in non-commercial carsharing:

"We know that, in the summer months, carsharing members more often take the bike, which means they avoid car trips. […] It can also be a value that I say, the bike trip to Grafing is more fun than the comfortable trip by car. […] And when this bike trip is fun, then I have a benefit, a personal benefit and the environment is spared, because the carsharing car is not moved." (Elmar, Grafing)

The collective engagement with the amount of movement can also be traced in the visions that carsharing members have for the association and carsharing in general. Friedrich, for example, told me that for him ideally nobody would own a personal car anymore: "*Ideally there would be way less cars that are better utilized. Nobody would have their own car.*" (Family Schuster, Königsbrunn) While he isn't particularly saying that there should be less movement, it is implied by referring to ideally increasing the utilization of cars with more than one person, by which at least the movement of cars would be reduced significantly. Reduction of movement or not, Friedrich actively pushes for a collective engagement with movement through increasing carsharing and so does Elmar: *"At the end the solution is complete sharing. Not only the tools and vehicles but also the trips. That is really important, the strategic approach."* (Elmar, Grafing) Likewise, Christa and her husband think that ideally everything would be carsharing. For them this means two things. First, nobody would own a personal car anymore and all cars that are on the streets are used collectively. Second, it means that carsharing is only the beginning of the association. Apart from adding public transport passes to the association they also have the idea of getting electric bikes, cargobikes or motorcycles and other things that can be shared amongst the members of the association. While this as well isn't necessarily reducing the amount of movement, sharing vehicles in this way, as I have shown earlier, leads to a more rational approach towards using cars for movement, ultimately shifting movement to non-carbon based forms where and when possible. Also Hannah has a future vision of mobility with significantly reduced car usage: *"The future is a sophisticated system of borrowing and not owning yourself, but renting. In fact different modes of transport in combination. […] And there is also types of urban form that from the beginning you design in a way that people don't need to have a car."* (Hannah, Grafing) For her the amount of movement is an inherently collective decision influenced by urban form and mobility concepts, of which the carsharing associations are part of. Thus, while the intention of engaging with the amount of movement across space and the actual effect of reduced car movement are quite visible in the actual behavior of the

carsharers, most members are not articulating this connection directly, but rather it becomes apparent indirectly in their visions of the future of carsharing.

Another aspect of commoning movement that was present amongst some of the private sharing arrangements is to enlarge the circle of users beyond the core group of carsharers: *"We are the four main users so to say and we also started to think about it. In case we don't need it and somebody else is asking, then one can [borrow it]. Karl-Theodor should rather drive than stand around."* (Karl-Theodor) The group wants to increase the spread of carsharing by allowing other people to use their car as well and thereby also collectively engage with the amount of movement. When Ivan and his extended family for example got their electric car it was a communication object within the neighborhood and quite some neighbors actually went for a test drive. Later, they also borrowed the car to friends whose car broke or who needed a second car in some occasions and couldn't afford it. And now that Ivan is moving to a housing community he is going to expand his private carsharing to this new group in order to increase the circle of beneficiaries of his carsharing and ideally reduce the total amount of car kilometers driven.

Summing up, it is quite clear that practices of non-commercial carsharing engage with collectively rethinking the amount of movement across space especially in relation to automobility. As described in previous chapters, to reduce the ecological impacts of car-driving through driving less is an intrinsic goal of non-commercial carsharing and its practitioners and the setup and goals of the association are made specifically in order to decrease kilometers driven with cars. This further becomes articulated in the visions of the future of carsharing by the carsharers and the extension of the circle of users to decrease the number of people in need of a private car.

3.4 Commoning practices of mobility

Commoning practice is the third aspect I discuss and refers to the *"collective rethinking of ways in which mobility is performed and governed, with a particular emphasis on the latter."* (Nikolaeva *et al.* 2019, p. 9) Commoning practice then has two meanings. First, the collective altering of actual mobility practices closely related to commoning movement, which I just discussed. Second, commoning practice is about how mobility is collectively governed and *"can bring about a shift towards more participatory decision-making models."* (ibid. 2019, p. 10)

I will first go into the aspect of how actual performances and practices of mobility are collectively rethought and altered. Generally, core practices of automobility, for example getting into your personal car in front of the door, are substantially altered through carsharing. Instead using a car requires booking a shared vehicle through an online platform and picking up the car on foot or by bicycle. But also practices around the car, such as cleaning and maintenance are changing through non-commercial carsharing. I again want to bring in the role of responsibility necessary in order to make the association work and its role as the root and enactment of shared ownership. From the perspective of commoning mobility, the responsibility

for the shared cars is a way of rethinking how mobility is performed. Instead of each person caring for their privately owned car, the collective of members of the carsharing association cares for the carsharing cars as it is becoming explicit in the car cleaning parties. In order to make the responsibility for the cars and the association a collective effort, the task of running the association is spread amongst multiple board members and many car wardens. Furthermore, members are approached and convinced to become engaged in the association and take over tasks such as the introduction of new members or public relations. In the private sharing arrangements this becomes visible in multiple statements of private carsharers that they care more for the shared car than they would for a personal car, but also in the actual practices of private carsharing, e.g. when Louis is driving Nancy to the mountain hut, so that he can use the car while she is gone or Beverly's agreement where the other person was driven home after exchanging the car. Frigga simply describes this as *"people help each other,"* (Frigga, Markt Schwaben) yet my argument is that this actually is a collective rethinking of how automobility could and should be performed and practiced.

This brings me to the second aspect of commoning practice, which is the collective governance of mobility. In my cases of non-commercial carsharing the aspect of collective governance mainly relates to how to manage and steer the associations and arrangements in order for collective care to develop: *"The user goes to the car and is for himself. […] And then he doesn't know anymore that he is supposed to fuel the car, when the fuel tank is down to a third, in case he doesn't hear from a different member: 'I was annoyed, I was at the car twice and it was nearly empty.'"* (Murray, Erding) Finding collective forms of solving these kind of problems is *"a key step in transforming attitudes and expectations of how mobility is conceived and managed"* (Nikolaeva *et al.* 2019, p. 10) and needs to be taken into account from the very beginning of commoning mobility.

Most people who are part of organizing the carsharing associations are aware of this need and try to find feasible and democratic solutions. When I asked Christa and her husband on how they imagine the association to deal with managing the cars, they replied that *"the people who are then part of the association, the members, should think about this together."* (Family Schmidt, Anzing) It is important for them that everybody who is part of the association feels responsible for it and that tasks are equally shared, so that not only a few people are working for the benefit of everybody else. Their wish then is for a democratic and collective decision making that is based on an equal and collective share of work and responsibility, as in other already established associations in the region. For this the association is particularly beneficial, because it is easy to handle, cheap and able to express the collective character of carsharing already by design:

"If you found a company, then it is about who owns the company and who gets the surplus? With the association, the association isn't owned by anybody, the surplus isn't distributed, but the character […], we do it together for us, is represent by the association form the best and the easiest." (Karl, Vaterstetten)

Yet, the essential part of governing the carsharing association is the (legally mandatory) yearly member assembly to elect the board, which manages the day-to-day business. Furthermore, the member assembly has to approve and decide on things that are relevant for the future of the association. For example, especially in smaller associations, the member assembly decides if a new car and which kind should be bought: *"We will buy the fourth [car] now. I am at least deeply convinced. The member assembly still needs to approve."* (Murray, Erding) Another example is the decision of the association in Vaterstetten to hire a person to take care of small infrequent tasks, which had to be approved by the member assembly. Bob described the member assembly as a place where problems in relation to the shared use and ownership of the carsharing cars are discussed and deliberated: *"We have these assemblies, where small women are complaining that when they enter the car the seats were far away from the wheel or something like that. Or someone had their dog sitting in the back, because there was dog hair on the seats."* (Bob, Grafing) And albeit the irony shined through his statement during our interview, the fact that he mentioned this to me shows that he at least listens to these concerns and thereby recognizes the member assembly as an attempt to collectively govern the practice of non-commercial carsharing. Ulrike described to me how the collective governance is also taking place on the micro-level of the board, for example when discussing where a new car should be placed or which kind of car should be proposed to the member assembly to buy. Furthermore, there are frequent member surveys on how a specific car is used, for example when a new model was bought, a car with automatic gears was introduced or a new parking location was introduced: *"It is really considered and geared towards the future."* (Ulrike, Grafing) The member assemblies as highest decision-making body and the board being judged in terms of how well the cars serve the members result in two things. First, "*in [the association] you can't think egoistically for yourself.*" (Mariarosa, Grafing) Second, *"the members take part. With DriveNow or something like that BMW decides. […] With us the members decide where the focus is.*" (Mariarosa, Grafing) Thence, the carsharing associations are actively trying to open the governance of sharing cars to all the people who use them, making the steering of the association and the shaping of mobility practices a more collective task. (Glover 2016, Newman 2016)

In the private sharing arrangements commoning mobility practices of governance happens on a much smaller scale, as the groups sharing the car in my sample are not bigger than four. Still within these groups the decision processes are kept open to all members of the arrangement and are characterized by deliberation and the negotiation of needs. A common way of finding usage agreements was to decide on priorities for usage instead of discussing the usage every single time. As already mentioned in the case of Karl-Theodor the group split the priority between summer and winter. In the case of Raya the priority for using the car was split between weekend and school holidays. The rest of the time was handled on a first come first serve basis and in case of overlaps a commercial carsharing service was used and included into the bill. This rather complicated agreement developed over time, showing how commoning is an ongoing process

of rethinking ways of collective governance, rather than a one-fits-all solution to managing common resources. A third example is the camping van shared by Mimi, Ellen and August At the beginning of each year they meet and discuss how to distribute the school holidays as these are the main times when overlaps of using the bus might occur. The rest of the time they manage their shared use through a shared *google* calendar. But the camping van also requires collective decision making when repairs need to be done, where they so far didn't find a satisfying solution. The group essentially sees themselves in kind of dilemma because they depend on each other in order to continue sharing the van. This became particularly apparent when an expensive replacement of the brakes had to be undertaken. If one person would have decided that they didn't want to invest the money into repairing the van, the whole sharing arrangement would have probably needed to be terminated. In the case of repairing the brakes they agreed that it is necessary and that they want to keep the van, but they don't know how that changes in case of another large damage. Hence, also in the private carsharing arrangements the governance of mobility is rethought from an individual decision process to a deliberative collective one, albeit on a micro-level.

Overall, I argue that through non-commercial carsharing the governance of mobility is collectively rethought in order to give the governance of mobility resources to the people who own and use them collectively. (Glover 2016, Newman 2016, Sheller 2018, Nikolaeva *et al.* 2019)

3.5 Enclosures and boundaries of commoning mobility

The last aspect I want to discuss are enclosures and boundaries. As said before commoning isn't a totalizing process, but constantly ongoing and in the making. This process is closely interrelated with the capitalist enclosures it is attempting to subvert. (Nikolaeva *et al.* 2019) Commoning thereby is inherently contested and "*simultaneously a defensive and productive act against […] enclosures and oppressions.*" (Chatterton 2010, p. 626) Practically however, *"some sort of enclosure is often the best way to preserve certain kinds of valued commons,"* (Harvey 2012, p. 70) whereby commoning might produce its own enclosures. While theoretically this undermines the process of commoning, I would argue that it remains possible and necessary to distinguish between capitalist acts of enclosure – through *"fencing in areas of production or the uses of certain goods and resources [or processes] of obstructing those commoning practices that tend towards an openness of sharing,"* (Stavrides 2016, p. 3) such as land-grabbing or for-profit bikesharing – and the use of enclosures for the protection and maintenance of struggled for commons. In the carsharing associations and private sharing arrangements multiple forms of enclosing the commons and boundaries of the collective attempt of owning and using cars together are present.

In the case of the associations the most evident form of enclosure is the formalization of carsharing through founding an association. Through this enclosure the access to the association and thereby to the commons of the carsharing cars becomes formally regulated and might exclude people who can't or don't want to join the association for some reason. On the other side "*it becomes difficult legally, when you do it*

completely informal.” (Rosa, Markt Schwaben) The associations had to deal with the problem of wanting to change mobility from within the mobility system, wherefore they abided to some formal requirements. Yet, the associations try to keep access to the common carsharing cars as easy as possible by making it possible to pay the entrance fee in instalments and not having any other requirements for joining. Another way of trying to overcome the enclosure produced by the formalization of carsharing is to help in founding new associations. Especially Vaterstetten and Markt Schwaben supported many associations by providing documents such as statutes and terms of usage, help in organizing meetings and even by contributing initial capital for buying the first car. A different example of enclosure is the association in Freising, which is using the booking system by *German Railways*. Therefore, their cars are also used by carsharers of the *German Railways* carsharing service *Flinkster* and part of the 'free market'. According to Simone, this creates problems as damages and dirt occur more often through users who aren't part of the shared ownership agreement. While there is no general solution to this problem the board in Freising is thinking about excluding the usage of certain kinds of cars from *Flinkster* users and make them only accessible to the association members in order to protect the commonly owned cars.

Also the private sharing arrangements are evidentially enclosed as the group sharing a car is clearly defined and entry into the sharing agreement is attached to specific requirements and often not even possible. In Walter's agreement for example it was decided that the shared cars cannot be given to people outside their group without the whole group agreeing on it. Their reasoning was that "*if something happens to him somewhere, he has to be part of the whole system,*" (Walter) which means that the person also has to pay the kilometer fee and contribute to the fixed costs. In the case of the shared camping van requirements for joining the sharing agreement developed over the years. The core group of the sharing agreement Mimi and Ellen realized that for sharing the camping van making sense, it is necessary that the people in the group not only live in the neighborhood, but also don't have a personal car:

"We realized, when we were searching for new people, that it is important that they live in the neighborhood and that they don't have their own car. It was like that with [a former sharer], she had her own car and only needed [the camping van] for vacation trips and they never happened." (Camper)

They thereby enclosed their sharing agreement to people who don't own a personal car. Furthermore, now that the camping van is also showing signs of aging, they even enclosed the sharing agreement to everybody as they don't trust other people to handle the car anymore.

In addition to these forms of enclosing the commons, the carsharers, especially in the association, described boundaries of sharing cars manifesting the contested and ongoing nature of commoning processes. (Turner 2017) Hannah described these boundaries as the varied manifestation of "*the individual responsibility for the shared product.*" (Hannah, Grafing) She explained to me in great detail how this is revealed in the cars not always being clean or fueled properly or how people book the cars until the next morning when they are

returning late at night, making it impossible for her to use the car for day-trips: *"These things happen and I think they are not in the spirit of the common goal. But, it probably needs a bit of idealism [...] a bit of engagement in your head so to say. [...] And I think there it becomes difficult. There you are hitting boundaries, so to say."* (Hannah, Grafing)

Another boundary is the ability to manage the association collectively as it becomes bigger. Without hiring people who can take over short-term tasks, that can't be fulfilled by the members of the association, it becomes very difficult to keep the association running without overloading a small amount of people with work. Furthermore, due to the size of the association people don't know everyone in the association anymore, whereby the feeling of responsibility for the cars is decreasing: *"We are leaving the range [where members feel like using their cars] and that creates problems in the association."* (Henri, Grafing) In order to solve these problems the associations need to be able to enforce more rules for the collective use, which again creates potential enclosures. For example the association in Grafing in one case had to exclude one member from using the cars, because of repeatedly not following the rules: "*Then you have to drive your own car, when you are not coming back on time or the fuel tank is driven empty and is not fueled for the next person. That just isn't OK. There are rules. Full stop."* (Mariarosa, Grafing) In most cases the members also recognize the necessity for these rules in order to keep the common use of the cars functioning for everybody: *"It actually is quite regulated, which probably also has to be like that."* (Ulrike, Grafing) These rules are clearly communicated and when becoming a member of the association new members need to sign terms of usage in order to ensure that they have read the rules: *"Every association has rules. For example that you shouldn't leave the car completely dirty [...] and also don't destroy the car [...] So there are rules and you also have to sign them."* (Erich, Grafing)

While these enclosures and boundaries surely result in enclosing the common cars to a certain extent, I wouldn't argue that the process of commoning is thereby subverted or contradicted in its entirety. Rather, the rules and enclosures are a necessary measure in order to make commoning possible in the first place by providing a legal framework needed for operating within the given capitalist system and by assuring that the commons are not destroyed through individualistic behavior. Thence, through supporting the continuation of the process of commoning these measures could play an important role in subverting the enclosures of the capitalist mobility system that make them necessary. (Harvey 2012)

4 Commoning mobility as expression of (everyday) resistance

In this discussion I first want to provide a summary of the chapter. Afterwards I will discuss its findings and arguments with the debate on sharing mobilities, the analytical tools of commoning and everyday resistance and outline their broader implications for processes of change.

Throughout my fieldwork the topic of ownership was an important and frequent topic. For many carsharers the benefit of the ownership of a personal car is not worth the money and time spent on sustaining it. Private car ownership, the lynchpin of automobility, is thereby becoming inefficient money- and time-wise. (Newman and Kenworthy 2015, Newman 2016, Andor *et al.* 2020) This coincides with the decrease of the personal car as a status symbol, thereby making shared ownership of a car a viable and desirable option. In the carsharing associations this shared ownership is intended by design through an initial capital contribution and the communication of the cars as shared property. This enables a wide-ranging shared perpection of the cars as collectively owned by the members, albeit this is differently expressed, as 'ours', 'my', 'like my own' or 'not my own' car, and in many cases only develops over time through repeated usage of the shared cars. In the private arrangements shared ownership is also intended by design, e.g. when cars are bought together, new members have to buy a share of an existing privately shared car and/or the fixed costs are shared. Yet, this doesn't happen in all cases. Nevertheless, also in cases without formally shared ownership a feeling of shared ownership developed over time through the repeated use of the shared vehicles. This enactment of shared ownership I conceptualize as the process of 'charging the car with community'. This process is manifested in using the shared cars together, shared activities around the shared car, increased communication due to the shared car, engagement in the associations, recognizing other carsharing cars on the street, collective care for the shared cars and an active awareness of the potential of sharing to build new and strengthen existing social relations. (Botsman and Rogers 2010, Freudendal-Pedersen 2015) Thereby *"collective ownership is [enacted as] a core feature of the social organization of everyday life and the functioning of communities and societies,"* (Verkuyten and Martinovic 2017, p. 13) emphasizing the interrelation between shared ownership and community and their importance in processes of commoning. (García-López *et al.* 2017, Velicu and García-López 2018)

Commoning refers to the interrelated processes of making something a common good, a commons. (Chatterton 2016, Turner 2017, Nikolaeva *et al.* 2019) Initially, the commons have mainly been conceptuatlized as a set of ownership relations. In the first part of the chapter I firmly established the nature of shared ownership in the carsharing associations and the private sharing arrangements. I deepened this argument by showing how the members not only understand the cars as 'theirs' but also see the association as 'our' association. Furthermore, the carsharing associations actually are mobility associations, as it is not only cars that are shared, but also public transport passes, whereby all motorized mobility is covered for some members. However, commoning proposes a more processual understanding of the commons as something that is always in the making and goes beyond mere ownership relations: *"Commoning mobility proposes a reconsideration of the value of mobility and its collective repercussions in addition to the communal management of transport."* (Nikolaeva *et al.* 2019, p. 11) Commoning mobility thereby entails rethinking mobility as a collective good.

In the remainder of this chapter I discussed non-commercial carsharing in relation to this process of commoning mobility, along four aspects: commoning meaning, commoning movement, commoning practice and enclosure and boundaries. In non-commercial carsharing the meaning of mobility is collectively reconsidered through taking into account the social impacts of mobility first by providing access to automobility to low-income households, second by changing representations of the car as utility, mobility as necessity and carsharing as convivial tool and third by influencing relationships on the move through taking away the stress of driving making people more sociable and incline them to more sharing in the community. Commoning movement takes place in non-commercial carsharing through an intended and practiced decrease in the use of the car that further becomes articulated in the future visions for carsharing and by increasing the circle of users in private sharing arrangements. The commoning of mobility practices has two aspects, which are the collective transformation of the performance of mobility and its collective governance. This transformation of the performance of mobility is on one side related to commoning movement and the actual practices of non-commercial carsharing. On the other side, the collective responsibility for the carsharing cars already discussed in previous chapters is an expression of the collective rethinking of how automobility could and should be performed. The collective governance of mobility is particularly expressed in the association structure, e.g. the member assembly as highest decision-making body, the board being judged by the purposeful organization of the shared cars and the non-profit character of the association. Therefore, the governance is geared towards the management of collective care and spreading the responsibility for the cars and organizational tasks across many members. In the private sharing arrangements the collective governance is concerned with who can use the cars when and decisions on the maintenance of the shared car. Overall, in non-commercial carsharing the governance of the mobility assets is given to those who collectively use and own the cars and not to some third party provider or company. Yet, also in non-commercial carsharing the process of commoning mobility is reaching boundaries and is related to enclosures, such as the formalization as an association, the exclusion of commercial users in some instances and the closed-shop nature of private sharing arrangements. Especially the associations are experiencing boundaries of commoning through different manifestations of the shared responsibility and the difficulties of managing the association with a growing size. These boundaries produce new enclosures, through excluding members who don't follow the rules or commercializing the association by hiring staff. Yet, in the cases I explored these enclosures mostly are necessary in order to make commoning mobility possible under the conditions of a capitalist mobility system.

Thus, I argue that non-commercial carsharing practices are changing ownership relations from private car ownership to the shared ownership of cars through a process of commoning mobility:

"Maybe, this is a bit philosophical. But I think the topic of ownership somehow is interesting here…because it is a possession, mine, yours, somehow divided. And this aspect of owning and sharing,

that would also be nice and good in other contexts. That I would see as an overarching theme. Maybe also a little bit liberating, when you don't have the responsibility alone for the possession, but you also know, this is somehow…well thereby you don't have to give the whole thing so much value. And it also isn't that bad when it breaks." (Karl-Theodor)

Seeing non-commercial carsharing practices through the analytical tool of commoning mobility, it becomes visible how everyday practices and meanings of (auto)mobility are collectively rethought, through commoning meaning, movement and practice. Through practices of non-commercial carsharing mobility is recognized as social value and collective good instead of a mere expression of individual freedom and the means for economic growth: *"Mobilities may be the means through which we interact with each other and with the environment around us (Te Brömmelstroet et al. 2017), something we share and can collectively govern rather than something we value only as it is converted into financial equivalent."* (Nikolaeva *et al.* 2019, p. 11) Newman, who researched a case of non-commercial carsharing in Wales got to similar conclusions about these practices: *"Talybont Energy get to the heart of communing; they utilize the intrinsic feature of cooperation that ties individuals together into society,"* (Newman 2016, p. 61) strengthening my argument that non-commercial carsharing is a considerable and significant contribution to altering practices and meanings of (auto)mobility and the emergence of an alternative mobility culture. (Sheller 2012)

Taking the content of the four aspects of commoning mobility together – collective rearticulation of the meaning of the car and automobility, shared car ownership and use, communal decision making and protective enclosures and boundaries – non-commercial carsharing can be positioned on the emancipatory side of sharing mobilities, implying a new kind of politics *"protecting the capability for human and more-than-human shared mobilities and free spaces for movement by regulating excessive mobilities, limiting unnecessary speed, regulating corporations, pricing the externalities of transportation, and preventing its harms."* (Sheller 2018, p. 169, see also Martin 2016, Nikolaeva *et al.* 2019) Thus, non-commercial carsharing takes a step into the direction of fulfilling the promises implied in the sharing economy *"for creating new businesses that allocate value more fairly, that are more democratically organized, that reduce eco-footprints, […] that can bring people together in new ways,"* (Schor 2014, p. 11) the *"building and sustaining [of] 'mutual livable lives' through the politics of commoning"* (Velicu and García-López 2018, p. 67) and the establishment of alternative cultures of mobility. (Sheller 2012, Newman 2016) Therefore, through shared ownership and the collective rethinking of mobility, non-commercial carsharing is redefining hegemonic practices and meanings of (auto)mobility by exhibiting "*governance and practice-based transformations that set the stage to redirect and restructure radical democratic engagement within existing material circumstances."* (Nikolaeva *et al.* 2019, p. 9)

To conclude, I want to take this argument one step further by relating and combining the analytical tools of everyday resistance and commoning. According to Chatterton, *"the commons are full of productive*

moments that continually emerge and create new vocabularies, solidarities, social and spatial practices and repertoires of resistance that can be used against capitalism." (Chatterton 2016, p. 407) Non-commercial carsharing as a process of commoning mobility transforms the *"dialectical webs of everyday practices through which people care for and (re)produce their ecological and social sustenance relations"* (García-López *et al.* 2017, p. 91) and *"unveil[s] why commoning and its performative re-articulations of common senses has counter-hegemonic potential."* (ibid., p. 103) Thus, I argue that the described process of commoning mobility is a form of everyday resistance because *"the shared mobility commons […] is that which allows for people to exercise such productive forms of autonomous social cooperation outside capitalism."* (Sheller 2018, p. 168f, see also Lilja *et al.* 2017) In this process, non-commercial carsharing necessitates to work within the capitalist system, whereby an entanglement with everyday power is unavoidable as is expressed in the enclosures, boundaries and ongoing incompleteness of commoning. Additionally, the community suppressed by the anti-common of individual automobility is *"taking the commons of mobility back into their own control"* (Newman 2016, p. 61) by criticizing the inefficiency and altering the practices of one of the core elements of homogenizing corporate capitalism (Pink 2012): private car ownership. The mobile commons invigorated by this process of commoning mobility are thereby a condition and the means for everyday resistance on the *"long road from particular commoning processes to a broader radical transformation that could replace capitalism"* (García-López *et al.* 2017, p. 102) by *"open[ing] up post-capitalist cracks to develop more interstitial practices, or indeed build capacity for ruptural change."* (Chatterton 2016, p. 405)

PART III

Discussion and Conclusion

Chapter Eight *Everyday resistance and the emergence of an alternative mobility culture*

In this discussion I will deal in-depth with the concept of everyday resistance. As elaborated in the introduction I chose everyday resistance as my main analytical concept, because from my perspective it allows to merge different concepts under an umbrella term, which emphasizes both aspects of change and everyday life. Thus, in the first part of the discussion I tie together the different aspects of everyday resistance which came up in the empirical chapters of my study and thereby build up the case for non-commercial carsharing as a vehicle for everyday resistance. Afterwards, I defend my argument by discussing it with the literature on everyday resistance based on the questions I raised in the introduction, other possible interpretations and its potential generalization to other forms of sharing. In the second part of the discussion I argue that non-commercial carsharing as everyday resistance enables the emergence of an alternative mobility culture. This results in linking alternative practices of automobility with other socio-cultural patterns and the reconfiguration of the reproduction of the automobile subject, stabilizing the processes of change through everyday resistance, re-embedding and commoning.

1 Non-commercial carsharing and everyday resistance

1.1 Building the case for everyday resistance

In the following four sub-sections I will recapitulate each empirical chapter and point out how they relate to the concept of everyday resistance. In the fifth sub-section I will summarize my argument and give a first answer to my fourth sub research question of how everyday resistance takes shape in non-commercial carsharing.

Alternative meanings and identities

In the first empirical chapter I argued that non-commercial carsharing reconstitutes automobility through establishing alternative meanings of the car in specific and automobility in general, whereby alternative automobile identities and subjectivities are produced. For almost all carsharers in my study the car isn't a status symbol anymore, but rather is perceived as an object of utility. Through the carsharers personal history and its ongoing societal persistence, the meaning of the car as status symbol leaves strong traces amongst the carsharers, wherefore some regard the car as a luxury good, while others tell excited stories about their old cars, dream of getting a car again, don't want to be seen in a carsharing car in the city center of Munich or use it as reference point for critique. The meaning of the car as object of utility – resulting in a more rational car use and a strong emphasis on the use-value of the car, movement – is strongly supported by and actually ingrained in the practice of non-commercial carsharing through managing for utility, revealing the real cost of owning and using a car and necessitating the planning of car use. Still, the meaning attached to

the car remains rather ambivalent, because the carsharing cars are often used for leisure activities, enabling the ongoing presence of the meaning as status symbol for comfort, independence and personal freedom.

Also the meaning of automobility undergoes a significant transformation. Both Urry and Paterson argue that the system of automobility incorporates two interrelated poles. Urry describes this as dialectics between freedom and coercion. (Urry 2004) Whereas, Paterson focuses on the mechanism behind this dialectic, describing automobility as means of liberation and means of domination at the same time. Historically, automobility was mainly perceived as means of liberation because of the intimate involvement of people in the production of automobility through the making of their own schedules. (Paterson 2007) This hegemonic understanding of automobility as means of liberation is challenged through non-commercial carsharing. Supported by the meaning of the car as object of utility, mobility – usually dominantly associated with freedom, flexibility and independence – is rather perceived as necessity, means to an end and necessary evil. Thereby, the coercive aspects of automobility, such as car dependence in rural areas or with kids, automobile gender roles, being tied into flexible schedules, forced attention while driving, the burden of car ownership or the lack of flexibility to use other modes of transport than the personal car, become visible for the carsharers. But just like the two meanings of the car, automobility isn't suddenly perceived as pure means of domination. Rather the realization of the ambivalent relation and tension between freedom and coercion inherent to automobility is an expression of how non-commercial carsharing is not only positioned against hegemonic automobility, but actually works with hegemonic meanings in order to produce alternative meanings with alternative identities and subjectivities: *"Resistance might not be hidden but might still be composed of rather subtle practices; for example, by performing subversive identities."* (Lilja *et al.* 2017, p. 46, see also Kent and Dowling 2013, Dowling *et al.* 2018)

In this entanglement with the everyday power of the hegemonic meaning of the car as status symbol and means of domination lies the first connection to everyday resistance. Commonly, resistance is related to exceptional acts like large demonstrations, direct action or violent struggles. However, everyday resistance focuses on everyday practices and meanings which oppose hegemony in its mundane and everyday appearance. (Vinthagen and Johansson 2013) In the case of non-commercial carsharing, the alternative everyday meaning of the car as object of utility, represented by using the car consciously and with a purpose, stands in opposition to the hegemonic everyday meaning of the car as status symbol, represented by using the car affectively and for the sake of driving. In this confrontation, entanglement becomes inevitable and is also an integral part of the process of resistance. It is the tension and ambivalence between hegemonic and resistant meanings and practices that ultimately produces the potential for altering how the structural level is reproduced through everyday practice on the level of the individual. (Vinthagen and Johansson 2013, Lilja *et al.* 2017)

There are three additional aspects of everyday resistance present in the alternative meanings of the car and automobility. First, through the lens of everyday resistance the emergence of alternative everyday practices and meanings in opposition to hegemonic everyday practices and meanings is interpreted as response to structural powers of domination on the level of individual agency, therefore 'from below'. (Lilja *et al.* 2017, Lilja and Vinthagen 2018) Second, non-commercial carsharing and the new meanings of the car and automobility connected to it provide alternatives to homogenizing elements of corporate capitalism, thereby offering building blocks for the development of alternative and potentially resistant identities. (Chatterton and Pickerill 2010, Pink 2012, Lilja *et al.* 2017) Third, as only the development of ingrained routines allows for the production of alternative meanings this chapter emphasizes the routine and everyday nature of non-commercial carsharing. (Vinthagen and Johansson 2013)

A last point I want to raise in relation to this chapter is that the development of alternative identities and subjectivities already points to one of the main outcomes of this process of everyday resistance, which is the emergence of an alternative mobility culture and a reconfiguration of the automobile subject.

The two sides of re-embedding: Contextualization and counter-hegemony

In the second empirical chapter I argued that non-commercial carsharing is ecologically re-embedding automobility. I started the chapter with discussing the reasons why people start practicing non-commercial carsharing in the first place. In the literature on carsharing the economic benefits of carsharing in comparison to private car ownership are often strongly emphasized, whereas values and attitudes, amongst them environmental motivations, are usually found to not have a strong influence on the decision to practice carsharing. (Hartl *et al.* 2018) Yet, based on the conducted interviews and grounded in the methodology of Critical Realism I assert that reasons for practicing carsharing go far beyond economic rationality. Especially environmental reasons play an important role as carsharing is seen as a way to alleviate the environmental problems of automobility in general and private car ownership in specific. Thence, practicing carsharing emerges from everyday reasoning about values and facts within a relationship of concern with the world and is co-determined by a complex relationship of different individual reasons and social structures. This implies that non-commercial carsharing is a social action involving agency either in terms of a deliberate and conscious decision to do something different or an unconscious transformation through alternative practices. (Collier 1994, Sayer 2011, Maxwell 2012)

Herein lies the first connection to everyday resistance from this chapter. The concept of everyday resistance focuses on the level of the individual and how individuals are confronting structures of domination in their everyday lives. (Vinthagen and Johansson 2013, Lilja and Vinthagen 2018) However, in order for any social action confronting structures of domination to become a form of everyday resistance this social action needs to involve agency. (Johansson and Vinthagen 2016) In the case of non-commercial carsharing this agency can be found most strongly in the conscious decision by the carsharers to overcome environmental

problems of automobility through becoming part of a carsharing association or starting a private carsharing arrangement. While agency is also present in many other aspects, the one grounded in ecological reasons and critique stands out and is particularly fostered by a process of re-embedding.

The process of re-embedding I described has two distinct but closely related appearances. On one side it refers to the recognition of the interdependence and interrelation between economy, society and nature and on the other side to a counter-movement against dis-embedding. (Giddens 1991b, Barham 1997, Polanyi 2001, Gibson-Graham *et al.* 2016) I already started to describe the first appearance of re-embedding above and I'll continue it now. Through the manifold ecological reasons for practicing carsharing, many carsharers developed a profound ecological critique of automobility, which results in an ecological contextualization of automobility. With recognizing the interdependence and interrelation between automobility and ecological destruction, automobility is relativized from a reincarnation of individual freedom and comfort to an ecological problem that requires a solution. And exactly this understanding provides an important cause for agency to change hegemonic everyday practices of automobility, because without this recognition action easily falls back to the unconscious reproduction of social structures. Therefore, re-embedding in terms of contextualization is an important step that needs to take place in order for reasons to become causes of agency in a process of social change through everyday resistance. (Sayer 2011, Gibson-Graham *et al.* 2016)

Now, the second appearance of re-embedding as counter-movement to dis-embedding becomes important. Effectively, the first appearance provides a reason for the second meaning to take shape, which is best visible in the critiques articulated against automobility, mainstream sharing and consumerism. In the chapter I argued in line with Paterson, that these three shouldn't be understood in isolation, but in their relation to and as complementing each other, forming a total critique of automobility as the contextualized basis for the carsharers agency and as the grounds on which the second meaning of re-embedding as counter-movement can emerge. (Barham 1997, Polanyi 2001, Paterson 2007) And as detailed in this and other chapters many people I interviewed specifically positioned non-commercial carsharing as a potential alternative to automobility and private car ownership, whereby non-commercial carsharing must ultimately be understood as a counter-movement and an inherently counter-hegemonic practice. (García-López *et al.* 2017, Velicu and García-López 2018)

This brings me to three further characteristics of everyday resistance that were present in this chapter. The first and the second were already made strong in the first sub-section. First, the process of re-embedding is inherently entangled with everyday power in both appearances. Re-embedding as contextualization essentially relates previously ignored aspects and problems with a certain issue. In the case of non-commercial carsharing the often unacknowledged negative environmental impacts of automobility, especially resource and space consumption, are again put in relation with what causes them. In its second appearance, re-embedding as counter-movement forms pathways for alleviating the need for re-embedding

in the first place. The re-embedding taking place amongst and by the carsharers thereby renegotiates the everyday power of automobility through entangling it with its overlooked consequences. (Vinthagen and Johansson 2013, Lilja *et al.* 2017) Second, in the conceptualization of re-embedding applied here, re-embedding is taking place on an individual level and by the people who are suffering from dis-embedding. Thereby, re-embedding is a response to the dominating power of automobility on the structural level from the coerced individuals through a social action involving agency. (Lilja and Vinthagen 2018) Third and last, by interpreting non-commercial carsharing as a counter-movement to dis-embedding, it obtains an inherent tendency towards counter-hegemony. This argument is based on the total critique of automobility, (Paterson 2007) which in connection with the changed meanings of the car and automobility essentially targets the existing hegemonic structures of domination inherent to automobility. The practice of non-commercial carsharing thus is ingrained with challenging automobility in the realm of everyday life, whereby it bears the potential for social change through the critique of domination through automobility in a process of everyday resistance. (Cohen and Hjalmarson 2018)

Building collective identity and agency for altering the reproduction of everyday practices

With the third empirical chapter I started emphasizing the collective level of non-commercial carsharing. I argued that non-commercial carsharing is building, strengthening and maintaining community through the combination of functional and communal qualities in its practices. The chapter started with discussing the building of community in the carsharing associations from the perspective of the association members and the people involved in the organization of the association. The members hold different views on the association, ranging from regarding it as mere service, as purpose organization or as carsharing community. While they attach different meanings to the association the members share the symbols of the association, such as its rules, its cars and the public transport passes. Thereby, they form a community in terms of an aggregation device around a common practice. (Cohen 1985) This is visible in the most common description of the association as an organized purpose community, underlining the both/and of function and community.

This building of community in the carsharing associations is strongly supported through the organization being almost completely based on voluntary labor. Besides the day-to-day organization of the association, e.g. maintaining and cleaning the cars, writing bills, taking care of damages, introducing new members, part of the voluntary labor is the organization of shared activities and the member assembly, which are geared towards building social contacts between the members. Additionally, the voluntary labor enables the association also on a more general level. First, it supports the development of trust in the association. Second, it reduces the operational cost of the association. Third and most importantly, it makes the association possible in the first place as without the different skills brought in through voluntary labor and engagement the associations wouldn't exist in their current form, because of lacking the booking platform or knowledge in financial organization.

In the private carsharing arrangements the building of community was not an important aspect, as these usually emerged out of an existing community of friends, neighbors or the larger family. In these, the shared car was sometimes even perceived as threat to the existing community as fights could break out about the car's costs, the car's usage and what happens in the case of damages or accidents. Therefore, as the carsharing associations, many private sharing arrangements developed a set of rules to deal with these problems, from the start of their endeavor and put great importance to clear and honest communication between the private sharers. Also because of these precautious measures, privately sharing a car frequently lead to strengthening and maintaining community, where the car sometimes even became a shared project or a group member. Ultimately, in both forms of non-commercial carsharing, a feeling of community developed based on trust in the association and/or the fellow sharers and a shared, but individually emerging, responsibility for the commonly owned cars. The effect of this feeling of community is that a collective identity as 'carsharers' and as part of 'the carsharing' developed.

In relation to everyday resistance there are four main aspects I want to emphasize from this chapter. The first two aspects are the already described entanglement with everyday power and response to power from below, which become particularly visible in non-commercial carsharing leading to a re-embedding of automobility into a social context, through countering the atomizing and fragmenting tendencies of the system of automobility.

The third aspect stems from non-commercial carsharing being a comparatively small action that changes one aspect of the individual carsharer's everyday life, through establishing a new routine for everyday mobilities. That is also how everyday resistance is characterized: as small, routinely done and everyday actions, contrasting large-scale action like demonstrations and revolutionary movements. (Vinthagen and Johansson 2013) Within the concept of everyday resistance the routine action shouldn't be articulated politically.[26] This is the case for the private sharing arrangements, the individual members of the carsharing associations and the political orientation of the association in total as not wanting to be politically affiliated with any party. Yet, on the organizational level there are contacts to local politicians and the national lobby association for carsharing, while municipalities often support the associations, which raises first questions about non-commercial carsharing as a form of everyday resistance.

The fourth aspect from this chapter I want to emphasize connects to the individual agency involved in non-commercial carsharing which was exemplified in chapters four and five. The small actions of everyday resistance are taken out by individuals, yet they are embedded in a collective context of small and local groups. Through the developing feeling of community and the resulting collective identity as 'carsharers', the individual agency becomes realized as collective agency. In the genuine concept of everyday resistance

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[26] Here political articulation refers to a relatively narrow understanding of politics, in terms of party politics and large scale civil movements with explicit demands to the governments and traditional political actors.

collective agency doesn't play a role as it emphasizes individual actions *"that are not organized, formal or necessarily public."* (Johansson and Vinthagen 2016, p. 5) So it seems, that especially the established and larger associations are raising questions about non-commercial carsharing as a form of everyday resistance and about the concept of everyday resistance itself, in terms of its relation to community and small-scale collective action and agency in everyday life.

However, I argue that in order for everyday resistance to make a contribution to social change, the individual agency has to be exercised as collective agency in order to alter the social relations through which hegemonic practices are reproduced. (Buechler 2000, Joseph 2003, Pieterse 2008, Wright 2019) I further base this argument on the claim by Scott, that the type of power determines the type of resistance. (Scott 1989) As the system of automobility exercises a broad domination within everyday life characterized by fragmentation, community building and collective organization are forms of resisting automobility in everyday life, realizing and stabilizing the building blocks of alternative futures and identities through the 'radical incrementalism' (Pieterse 2008) of non-commercial carsharing.

Commoning mobility: Resisting the reproduction of hegemonic automobility

Also the last empirical chapter focused on the collective side of non-commercial carsharing. I started the chapter, however, with describing how for many carsharers private car ownership became inefficient in terms of money, time and usage. Together with the alternative meaning given to the car as object of utility, shared ownership of a car becomes much more attractive. In non-commercial carsharing this shared ownership takes many different forms, such as mediated through the associations, as a car that is bought together, as buying a share of an already existing shared car or only as perceived shared ownership. Especially in the associations this perception of shared ownership is intended by the design, common activities and the association structure, but also in the private sharing arrangements the shared ownership is often implemented purposefully to support a shared responsibility for the shared car. In both cases the shared ownership is enacted through a process I term 'charging the car with community'. This process is strongly supported by the aspects that also help developing the feeling of community – social contact, appreciative communication, voluntary engagement, using the cars together, responsibility for the shared cars – but also specifically by the development of feelings for and a collective relationship of care with the shared car. Thereby, the shared ownership of the carsharing cars becomes deeply entrenched into non-commercial carsharing and its practices and practitioners.

In this intended establishment of shared ownership lies an aspect of everyday resistance I want to re-emphasize from the chapter on the changing meanings of automobility. There I argued that the alternative meanings of the car and (auto)mobility provide alternatives to homogenizing elements of corporate capitalism and thereby the building blocks for alternative futures and identities. (Pink 2009, Chatterton and Pickerill 2010) The development of shared ownership is closely related and supports this argument. First, the

development of alternative meanings of the car and (auto)mobility and of shared ownership depend on each other and are actually hard to imagine without the other one as a collectively owned symbol of personal status sounds like an oxymoron. Of course, there are many individually owned objects of utility, but in the case of cars this easily results in their inefficiency as described above. Thence, these two aspects sustain each other and stabilize the practices of non-commercial carsharing and the community of carsharers as alternative futures and identities to hegemonic automobility.

The second part of the chapter conceptualized this process of stabilization taking place in 'charging the car with community' as a process of commoning mobility. Commoning is "*a set of processual relations through which something becomes common*" (Nikolaeva *et al.* 2019, p. 8) and consists of four main aspects of commoning the meaning of mobility, commoning movement and commoning practices of mobility and interrelated enclosures and boundaries. In the analysis of these aspects lies the possibility to assess sharing mobilities according to their position on the spectrum between neoliberal co-option and emancipatory potential, (Martin 2016) while commoning mobility also implies a new kind of politics *"protecting the capability for human and more-than-human shared mobilities and free spaces for movement by regulating excessive mobilities, limiting unnecessary speed, regulating corporations, pricing the externalities of transportation, and preventing its harms."* (Sheller 2018, p. 169)

In the cases of non-commercial carsharing I looked at all three of the above aspects of commoning mobility are present. The commoning of the meaning of mobility takes place through collectively reconsidering the meaning of (auto)mobility from individual freedom to a shared good through taking into account the social impact of automobility (access to a car for low-income households), rethinking the representations of the car (personal ownership to shared ownership) and altering relationships on the move (less annoyance and less individual movement). Commoning movement, the collective rethinking of the amount of movement through space, is present in the reduction of car use amongst carsharers due to non-commercial carsharing. While this is rarely articulated directly by the carsharers the intention becomes particularly visible in the visions they have for non-commercial carsharing and mobility, to become less car-centered and less focused on the consumption of distance. (Heisserer and Rau 2017) The commoning of practices of mobility, the way mobility is performed and governed, becomes openly visible in the differences between the hegemonic practices of automobility and the alternative practices of non-commercial carsharing – taking the car in front of your door whenever you want compared to planning car use and picking the car up by bicycle – and is further incorporated in the collective governance of the shared cars through voluntary engagement and member assemblies. The strong presence of all three aspects of commoning mobility clearly positions non-commercial carsharing on the emancipatory end of the spectrum of sharing mobilities.

Herein lie the final aspects of everyday resistance I worked out in the empirical chapters. First, the process of commoning is inherently connected to everyday practices of people struggling against capitalist

enclosures. Albeit commoning could theoretically take place on a structural level of state politics, it usually is a decidedly local process individually undertaken by people and driven by their immediate concerns for the collective management of parts of their livelihoods, their *"being-in-common"* and the building of *"mutual livable lives."* (Velicu and García-López 2018, pp. 60 & 67) Therefore, non-commercial carsharing is characterized as a response to power from below not only in terms of a response to structure from agency, but also to the dominating powers of everyday automobility from the ones suppressed by it. (Johansson and Vinthagen 2016) Second, non-commercial carsharing as a form of commoning mobility again emphasizes its entanglement with everyday power, because the process of commoning entails taking something from the influence of hegemonic everyday practices that isn't currently a commons – car ownership – in order to make it a common good. (Vinthagen and Johansson 2013, García-López *et al.* 2017) Third and last, as emphasized by Chatterton and Harvey, commoning usually takes an oppositional stance towards capitalist societies, whereby non-commercial carsharing at its least entails a critique of existing social structures of domination by hegemonic automobility, bearing the potential for social change. (Harvey 2012, Chatterton 2016, Cohen and Hjalmarson 2018)

Non-commercial carsharing and the potential for everyday resistance

In the introductory chapter I conceptualized everyday resistance as acts that simultaneously have the potential to undermine everyday power and are integrated into the actor's everyday life, hence everyday oppositional practices. Additionally the literature on everyday resistance regards power and resistance as inherently related and entangled, wherefore practices of everyday resistance act not only against power, but are also always caught within networks of power, which influence the outcome of their acts. (Lilja and Vinthagen 2018) Thereby, everyday resistance is never total, but rather is a process and leads to resisting bits and pieces of everyday power, while subordinating to others.

As detailed in the previous summaries of the empirical chapters, these aspects are clearly visible in the cases of non-commercial carsharing. It is indisputable that non-commercial carsharing for most carsharers is an integrated part of their everyday life and mobility, as they use it to go shopping, picking up their children or for leisure activities. I have also shown how non-commercial carsharing is undermining the everyday powers of (auto)mobility in a process of 'productive everyday resistance'. (Lilja and Vinthagen 2018) Figure 8.1 summarizes which aspects of everyday resistance were mainly emphasized in which chapter.
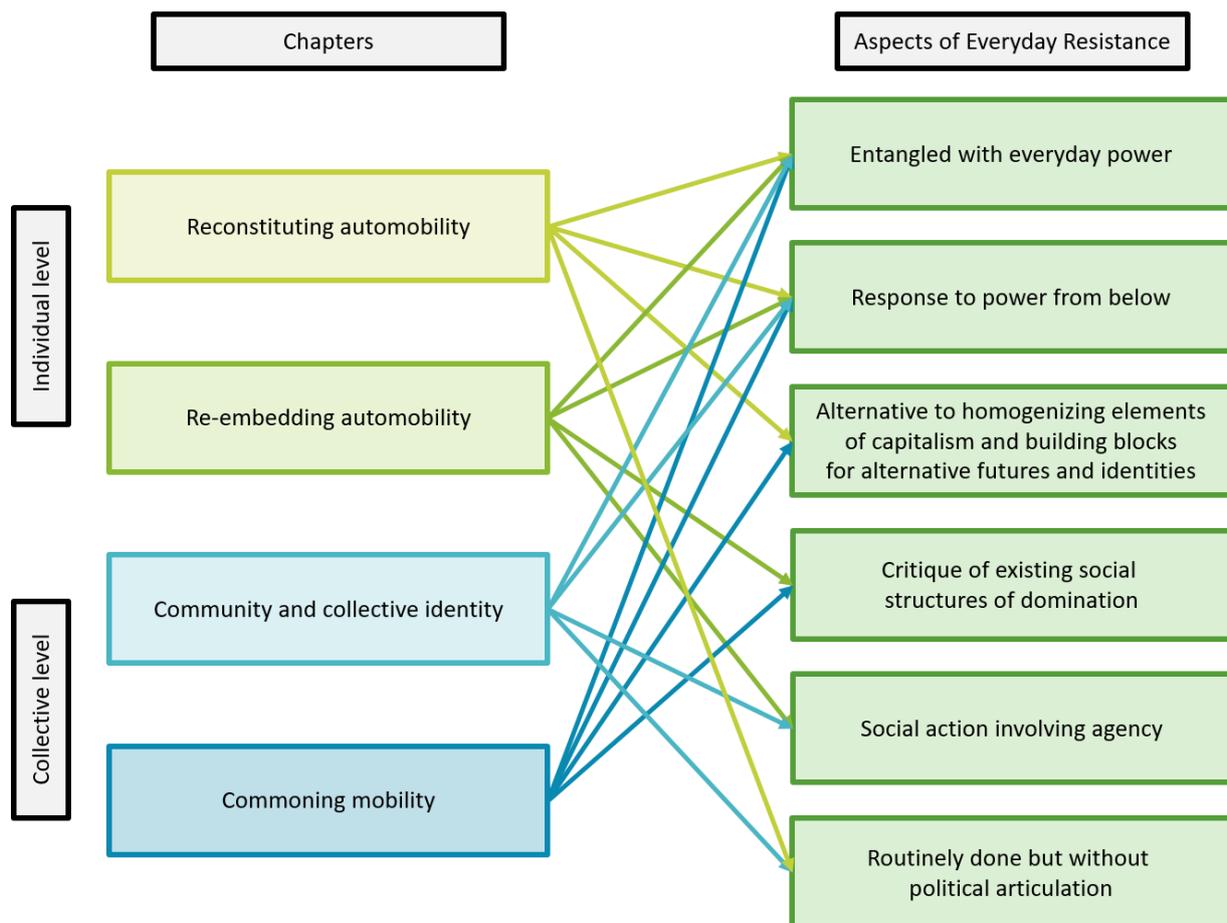
Figure 8.1: Graphic representation of the distribution of the discussed aspects of everyday resistance across the empirical chapters.

As indicated in the summaries the first and second empirical chapter focused on the individual level and genuine concept of everyday resistance. The third and fourth chapter focused on the collective level present in non-commercial carsharing, where multiple aspects of everyday resistance were also strongly present, just in different forms and facets. Especially two of the core aspects of everyday resistance, its entanglement with everyday power and its character as being a response to power from below, came to the fore in all chapters. While this could be read as the missing of thematic consistency, I argue that this is a clear indication for non-commercial carsharing challenging the everyday hegemony of automobility in different ways:

1) It redefines the meanings of the car to object of utility from status symbol and (auto)mobility to necessity from freedom

2) It transforms automobility into an ecological problem that needs to be countered with individual action

3) It challenges the individualizing tendencies of automobility and provides (collective) identity and agency as 'carsharers'

4) It transfers cars into shared ownership and thereby commons meaning, movement and practice of (auto)mobility

Two other important aspects of the genuine concept of everyday resistance were strongly present in the case of non-commercial carsharing. The first one is its routine character, in terms of an everyday practice. On one side, this was present in the chapter on the changing meanings of the car and (auto)mobility, as the habitualization of alternative everyday practices is an important part of establishing these new meanings. On the other side, this was visible in the chapter on community and collective identity as the everyday character of non-commercial carsharing enables the development of routinized micro-management and social contacts. The second additional aspect is that everyday resistance is a social action involving agency with an emphasis on the former. What counts for everyday resistance is "*the resistance act, the agency itself or the way of acting*" (Vinthagen and Johansson 2013, p. 18) and not the mere intent or consciousness. (Johansson and Vinthagen 2016) I exemplified this in particular in the chapters on re-embedding and community as the carsharers' consciousness of a problem, the social and ecological damages of automobility, became materialized in the practices of non-commercial carsharing as a counter-movement against these impacts. (García-López *et al.* 2017)

However, even without the consciousness of these problems practicing non-commercial carsharing opposes these impacts. As became visible throughout the empirical chapters the process of everyday resistance often wasn't complete, but resulted in ambivalent forms such as the car as leisure vehicle, trade-offs between the ecological benefits of carsharing and other ecological damages, enclosures by the carsharing groups or the co-presence of private and shared car ownership. Yet, because the basic characteristics of everyday resistance are met I argue that non-commercial carsharing is a form of everyday resistance against the hegemony of everyday practices of automobility, such as private car ownership and the car's dominance in everyday mobility.

The additional two aspects go beyond the genuine concept of everyday resistance as they don't point to a specific characteristic of everyday resistance but to its outcome, intended or unintended. The aspect of everyday resistance providing alternatives to homogenizing elements of corporate capitalism and building blocks for alternative futures and identities originate from the related concepts of indirect and everyday activism outlined in the introduction. (Chatterton and Pickerill 2010, Pink 2012) Everyday resistance being a critique of existing social structures of domination originates from an empirical case of everyday resistance by migrant farm workers in rural Canada. (Cohen and Hjalmarson 2018) With including those in building the case for everyday resistance, on one side, I want to highlight the character of everyday resistance as oppositional and sub-political act and thereby also the counter-hegemonic character of practices of non-commercial carsharing. On the other side, more than the genuine concept of everyday resistance, I want to emphasize the relationship between everyday resistance and change that becomes particularly visible in critiques of domination and alternative futures emphasized by indirect and everyday activism. (Goldstein 2017) Thus indirect and everyday activism build the bridge between the concept of everyday resistance and

re-embedding and commoning by broadening the scope of everyday resistance to its implications and effects beyond the individual. (Polanyi 2001, Chatterton 2016)

Each of the six aspects by themselves wouldn't make non-commercial carsharing qualify as everyday resistance against automobility. Seeing the car as object of utility certainly opposes the system of automobility, but doesn't resist its hegemonic character. Only in the connection and interrelation of the aspects everyday resistance can emerge. When the car as object of utility results in alternative everyday practices and becomes collectively owned by a group that consciously opposes automobility and mobility as freedom because of its social and ecological impacts, partial critique turns into counter-hegemony and opposition turns into everyday resistance. (García-López *et al.* 2017, Lilja *et al.* 2017)

This said, it should have become clear in the empirical chapters that not every individual person practicing non-commercial carsharing necessarily does all these things. Rather, the practitioners of non-commercial carsharing could be identified along a spectrum ranging from understanding non-commercial carsharing in a purely utilitarian way motivated by rational behavior towards understanding non-commercial carsharing as an outright form of resistance motivated by a perceived need for self-constraint of automobility. Importantly, even the utilitarian end of the spectrum at least supports the organizational challenging of the primacy of private car ownership, providing an entry point for further challenges to the hegemony of automobility. Therefore, the argument I make is not that every person who practices non-commercial carsharing becomes some kind of resistance fighter on the everyday level. Instead, they are the bearers of the potential for everyday resistance inherent in the practices of non-commercial carsharing and become, so to say, vehicles of and for resistance.

1.2 Defending the case for everyday resistance

For defending the case for everyday resistance I want to discuss two things. First, I want to continue discussing non-commercial carsharing with the body of literature on everyday resistance by providing answers to the remaining questions I raised about everyday resistance in the introduction. Thereby, I will work out differences between the genuine concept and the conceptualization of everyday resistance developed here and point out a blind spot of everyday resistance, which is the collective and organizational character of everyday life. (Cohen and Taylor 1978, de Certeau 1984, Kaplan and Ross 1987, Lefebvre 2014, Martin *et al.* 2015, Murray and Doughty 2016) Second, I want to defend non-commercial carsharing as a case of everyday resistance against alternative explanations, especially lifestyle oriented theories and delineate the conditions under which sharing more generally can be considered a form of resistance.

The collective and organizational character of everyday life

In the introductory chapter I raised multiple questions about everyday resistance in relation to non-commercial carsharing. I already answered two of these questions to build the case for understanding non-

commercial carsharing as everyday resistance: *What is the everyday resistance of non-commercial carsharing against?; How does it undermine or negotiate power?* By answering the remaining questions I want to point out important differences between the genuine concept of everyday resistance and the case of everyday resistance I argue for here.

Do the carsharers qualify as 'dominated' and act as a response to power from below?

One of the most apparent differences between non-commercial carsharing and the usually analyzed cases of everyday resistance is the type of people, who are resisting. Most people practicing non-commercial carsharing are neither poor nor oppressed in the usual sense of the word, but rather middle-class people with an average income and education. The majority doesn't practice non-commercial carsharing because they aren't able to afford a privately owned car. But then why do I nevertheless recognized them as dominated and oppressed? The explanation and justification lies in the nature of power and oppression of the system of automobility. (Scott 1989) The hegemony exercised by automobility is much broader and unspecific compared to most other cases of everyday resistance in the literature, whose agents also often were specifically chosen because of their identification as subalterns *in general*, e.g. migrant farm workers in Canada, childless woman in India or Sámi reindeer herders in Norway. (Riessman 2000, Johnsen and Benjaminsen 2017, Cohen and Hjalmarson 2018) As automobility potentially coerces many people across distinctions of class, gender, age and race into a way of life they don't want, it also potentially turns broad strands of people into 'subalterns' dominated by automobility. Thence, the people practicing non-commercial carsharing are dominated and practice everyday resistance 'from below', however not because of their overall subaltern position in society, but because of their specific subaltern position in relation to automobility, the actual target of the resistant actions.

How is non-commercial carsharing politically articulated and how does this contradict its conceptualization as everyday resistance?

One part of the definition of everyday resistance is that it consists of routine actions, that aren't politically articulated. In the summary of the chapter on community I already hinted at non-commercial carsharing not completely matching this part of the definition. The practices of non-commercial carsharing themselves usually are not politically articulated, but rather presented as a logical and rational consequence by each individual practitioner. The associations don't affiliate with any political party, but carsharing is articulated as an action that is good for the whole community, independent of political affiliation and political goals beyond reducing car traffic. Nevertheless, as became visible some individual members politicize their practices of non-commercial carsharing as actions against the ecological damages and domination of automobility. Furthermore, on the organizational level of the associations exist manifold connections to the municipal and regional governments – which mostly support the local carsharing associations with providing parking spots as a way of ameliorating existing traffic problems – and to the national lobby association for carsharing. The politicization of the content of the everyday practices by individual members I don't regard

as a contradiction with the concept of everyday resistance. Rather it is a direct consequence of the self-reflection involved in agency and an expression of the political content of everyday life, (Beck 1986, Poferl 1999) which however remains "*politically invisible, as it does not conform to conventional understandings of politics.*" (Vinthagen and Johansson 2013, p. 10) Yet, the searching and finding of support in local government and national lobby associations and carsharing's congruent politicization as a topic in political circles go beyond the concept of everyday resistance. This points towards the associations being a different form of (everyday) resistance, a thought I will continue in the following two answers.

> *Does the organization of non-commercial carsharing in associations disqualify it from being everyday resistance?*

Another conflict between the genuine concept of everyday resistance and the associations is that everyday resistance is conceptualized as *"not formally organized (yet or in that situation)"* (Lilja *et al.* 2017, p. 46) and rather contributing to social organization than being immersed in it. Therefore, albeit Vinthagen and Johansson argue that everyday resistance "*is a form of activity that often avoids being detected as resistance*" (2013, p. 10) – which is true in the case of the associations as they avoid taking political sides, appealing to moral values or appraising social and ecological benefits – the level of formal organization seems to be a mismatch between non-commercial carsharing in the form of carsharing associations and everyday resistance. The level of formal organization is relatively high and probably higher than in other cases of everyday resistance in the literature. Yet, I argue that the characteristics of the power that is resisted, the everyday domination of automobility, make a certain level of organization an integral and necessary part of acts of resistance against automobility's everyday powers: (Scott 1989)

> "*Addressing auto dependency as a political problem – one that is intimately linked with prevailing social inequalities, systems of production, government policies, work patterns, time routines, gendered practices, social and material infrastructures, and so on – will require us to reclaim the value of collective action in pursuit of systemic social change."* (Soron 2009, p. 194)

As discussed above the domination automobility exercises in everyday life is broad and nearly all-encompassing. Particularly relevant for forms of everyday resistance against automobility are its individualizing and atomizing tendencies, which demand a coerced flexibility, individual scheduling and lonesome driving. (Urry 2004) Therefore, the individual form of everyday resistance against automobility, not using a car, easily leads to more individualization, atomization and even isolation as many destinations can't be reached without a car. (Gorham 2002, Coutard *et al.* 2004, Buys *et al.* 2012) While this should be considered as a form of everyday resistance against automobility, it isn't necessarily beneficial for the ones resisting, nor the most effective as it positions the resisting subjects outside of many everyday power relations of automobility: *"Individuals will continue to experience automobile dependency as an unavoidable fact of nature, and the pursuit of alternatives will tend to get unduly narrowed to making greener consumer*

choices." (Soron 2009, p. 194) Contrastingly, organizing everyday automobility collectively through carsharing is beneficial for the resisting in many ways, positions them within and against everyday power through the altering of everyday practices of automobility and is furthermore resisting atomization. (Newman 2016, Dowling *et al.* 2018) Henceforth, non-commercial carsharing is a form of resistance that takes place in everyday life and whose core act of resistance, the renegotiation of everyday power, is taken out individually. However this requires a collective organization in order to become an effective form of resistance in the first place. (García-López *et al.* 2017) Albeit, the term organized resistance might still seem to be better suited for the associations, it usually refers to mass demonstrations, rebellions or maybe trade unions and not to small groups and their alternative everyday practices. (Lilja *et al.* 2017) Thence, the concept of everyday resistance needs some clearance regarding its relationship to small scale collective action in everyday life and forms of everyday domination that make organization a necessary part of resistance in everyday life:

"The relationship between resistance and social change is fundamentally unclear. There are immense difficulties in establishing correlations between the diffused and small-scale acts of individuals and the processes of social change. Nevertheless, studies of social change need to take everyday resistance into account since, on an aggregate level, it might have profound effects." (Lilja and Vinthagen 2018, p. 224)

What is the relation between everyday resistance, collectivity and community?

Also in the topic of community a potential conflict between non-commercial carsharing and everyday resistance emerges. In the literature I consider as giving rise to the genuine concept of everyday resistance there is no direct reference to community and generally everyday resistance is defined as individual or small-scale, without specifying what this means. However, as I argued above the building of community in some cases can actually be considered a form of everyday resistance, for example a process of commoning or counter-movements against dis-embedding. (Barham 1997, Martin *et al.* 2015, Velicu and García-López 2018) Furthermore, community can be an important factor in sustaining practices of everyday resistance, which otherwise might disappear without impact but with possibly disillusioning the resisters as commonly occurs within large-scale organized forms of resistance. (Cox 2011) Lastly, investigating the relationship between everyday resistance, collectivity and community might yield interesting insights into the broader and long-term effects and success of forms of everyday resistance and its influence on processes of social change. (Jordan 1998, Lilja *et al.* 2017)

In the last two answers I pointed out that the concept of everyday resistance requires some specification regarding the scale of organization and the role of community for forms of resistance in everyday life. The focus of everyday resistance on resistant acts of individuals highlights subtle, hidden and scattered forms of resistance and shows that resistance is more diverse than rebellions and demonstrations. (Lilja and Vinthagen 2018) However, through its insistence on individuality many acts of resistance in everyday life remain unnoticed in the large gap between individual and mass action. Albeit practices of everyday life are ultimately

undertaken by individuals, they are always embedded in a context of communities, social networks, social relations and social structures, be it the family, the workplace or the neighborhood: (Cohen and Taylor 1978, de Certeau 1984, Kaplan and Ross 1987)

> *"The existence of the 'micro' [(everyday)] level implies and supposes neighborhood (or contingent) relations in a social space. Distinct but not separated, the sides and facets of microelements come into contact with each other. […] The history of the individual in his everyday life cannot be separated from the social sphere. Narrow and limited though it is, it is part of other, broader works."* (Lefebvre 2014, pp. 435 & 638, emphasis in original)

Therefore, also practices of everyday resistance need to be understood not only in their relation to power, but also in their relation to the everyday contexts they are embedded in and *"people's interconnectedness with others in their communities."* (Martin *et al.* 2015, p. 82) This acknowledgement of the communal and relational character of practices of everyday life in connection with the fragmenting conditions of capitalist society broadens what can be understood as acts of everyday resistance: *"Reworking social networks can reconfigure existing power relations and thereby transform everyday life, even where such actions do not challenge the overall political-economic structure."* (Martin *et al.* 2015, p. 81) Thence, instead of conceptualizing everyday resistance only as individual, non-organized acts the *"building [of] relationships among people that foster change in a community"* (Martin *et al.* 2015, p. 81) is also a form of everyday resistance. Ultimately, this might result in some form of organization and become a form of organized, large-scale resistance. (Lilja *et al.* 2017) Nevertheless, its beginnings as small-scale communal organization of altering everyday practices and encouraging other to do so as well, should certainly be considered a form of everyday resistance. (Pieterse 2008) And while this was considered a form of productive (everyday) resistance already, e.g. with the building up of the Zapatista movement in Mexico, (Lilja and Vinthagen 2018) the role of community and organization for everyday resistance has so far not been theorized sufficiently.

I regard this as an important topic for further research on everyday resistance. While I can't offer a theorization of the relation between community and everyday resistance, I can offer empirical and methodological directions. My empirical work shows that the building of community and the continuation of resistance in everyday life go hand in hand and at least in the case of automobility, but probably generally under conditions of capitalist fragmentation and commodification, (Beck 1984, 1986) effects and forms of community such as commoning and re-embedding can be a form of resistance in themselves. (Barham 1997, Gibson-Graham 2006, Chatterton 2016, García-López *et al.* 2017) Methodologically, I argue in line with Critical Realism and the TMSA that changing the reproduction of social structures through everyday practices on the individual level towards the transformation into different social structures requires collective agency.

This in turn, is best supported by a feeling of community and a collective identity. (Buechler 2000, Joseph 2003, Wright 2019)

Thus in theorizing and researching the relationship between everyday resistance and community, other conceptualizations of change in everyday life, such as commoning and re-embedding, can yield starting points and initial insights: (Barham 1997, García-López *et al.* 2017)

"To study the everyday is to wish to change it. To change the everyday is to bring its confusions into the light of day and into language; it is to make its latent conflicts apparent, and thus to burst them asunder. It is therefore both theory and practice, critique and action. Critique of everyday life encompasses [...] the decision to render ambiguities unbearable, and to metamorphose what seems to be most unchangeable in mankind." (Lefebvre 2014, p. 520)

Thus, everyday practices, meanings and identities are important locations for processes of change and inherently connected to the collective and organizational nature of everyday life. Additionally, community, collective identity and agency are also important prerequisites for the emergence of an alternative mobility culture, essential for stabilizing practices of non-commercial carsharing through routinizing and normalizing them. (Sheller 2012)

Yet, before discussing this central outcome of the process of everyday resistance, I want to further defend my argument against alternative explanations of coping and lifestyle and outline the relation to other forms of sharing to counter the claim of overemphasizing the significance of sharing.

Coping, lifestyles and the resistance potential of sharing

In this sub-section I want to briefly discuss two alternative interpretations of the case of non-commercial carsharing, which both were formulated as critiques to my work during its development process. Another objection to the interpretation of non-commercial carsharing as everyday resistance was its relation to other forms of sharing and the critique that interpreting non-commercial carsharing as everyday resistance overemphasizes its significance. Therefore, I will delineate the boundary for when other forms of sharing become resistance or not, thereby specifying and limiting the potential for generalization of my argument.

The first alternative interpretation was usually formulated as some version of 'Aren't they just trying to cope with their situation?' And certainly non-commercial carsharing to a certain extent is an attempt to cope with the unavailability of carsharing or the unaffordability of a personal car. But, first, this does not at all contradict the interpretation as everyday resistance and second, non-commercial carsharing is about more than the mere access to a car. The concept of everyday resistance specifically does not exclude coping as a form of everyday resistance, however emphasizes that it depends on *"how the techniques are applied, in what context and in relation to what power"* (Vinthagen and Johansson 2013, p. 24) as well as their cumulative effects to determine to what extent coping can become everyday resistance. As should be clear

from the previous part of this discussion, I argue that the conditions that qualify coping as resistance are more than present, because non-commercial carsharing is about more than allowing access to a car. Non-commercial carsharing reconstitutes the meanings of the car and automobility, is the expression of an ecological critique of automobility, provides a community and collective identity and is an active attempt at commoning mobility. Thence, while for a few carsharers some or none of these might be relevant, whereas it can be an individual coping strategy, seen from a collective and practice level non-commercial carsharing goes beyond coping and becomes a relevant site for everyday resistance against the hegemonic everyday power of automobility. (Shove *et al.* 2012)

The second alternative explanation I want to discuss is to interpret non-commercial carsharing as an expression of the ongoing individualization into lifestyles ('Lebensstil') and the concomitant *"new weight of cultural-symbolic and consumptive-expressive dimensions of social distinction."* (Lüdtke 1990, p. 437, author's translation) The symbolic and distinctive dimension of non-commercial carsharing is most present in the recognition of the association cars as shared cars, the developing communities and the collective identity as 'carsharers'. Additionally, non-commercial carsharing is often embedded into broader ecological lifestyles and goes together with organic food and electricity from renewable sources. Hence, to interpret non-commercial carsharing as a lifestyle or as part of it is certainly possible. However, I argue that a pure lifestyle perspective overestimates the symbolic and distinctive dimension of non-commercial carsharing, while underestimating its normative content and sidelining its transformative potential. The symbolic and distinctive dimension is overestimated because of two main reasons. First, practicing carsharing is only a part of the everyday life of the interviewees and the identity as carsharer only a small part of their identity, incomparable with what is usually understood as lifestyle, e.g. punk, hipster, global nomad. Rather, non-commercial carsharing could be interpreted as part of a general lifestyle towards environmentally-friendly behavior, described by some interviewees as the 'musli-fraction' or 'eco-corner', which however doesn't bear much analytical value. Second, when carsharing was referred to as part of the 'eco-corner' it was always mentioned as something of the past, which hints that practicing carsharing isn't special or distinctive anymore, at least from the interviewees' perspective. Additionally, while for some carsharing has the symbolic value of showing that living without a car is possible, for others carsharing doesn't serve an active distinctive purpose. Overall, this indicates that other aspects of non-commercial carsharing are more important and analytically interesting than its symbolic and distinctive dimensions.

These more interesting aspects are the normative content of non-commercial carsharing through its dominant ecological framing and its transformational potential regarding automobility and the wider mobility system through shared ownership. Angelika Poferl discusses the significance of lifestyles in relation to environmental conscience and argues that *"under the ecological problem the lifestyle paradigm of a perspective of cultivating difference cannot be assumed a priori."* (Poferl 1999, p. 41, author's translation)

According to her, ecological issues invigorate the contradiction between cultural pluralization and collective demands, which spans across different lifestyles and forms of differentiation, evading an easy categorization as mere matter of social distinction. Through its strong ecological focus this is also the case for non-commercial carsharing. Focusing on social distinction could result in overlooking the sub-political negotiation of the contradiction between cultural pluralization and collective demands and the development of alternative common senses taking place in the changing meanings of the car and automobility and the process of commoning. (Beck 1986, Poferl 1999, García-López *et al.* 2017) Furthermore, taking a perspective that is focused on the individual and its subjectification runs into the danger of missing the consequences of the practices that go hand in hand with changing identities and subjectivities. Contrastingly, a change-focused perspective as adopted here, can unpack how subjectification plays a role in changing identities, subjectivities and practices and thereby bears the potential for altering the reproduction of social structures through alternative everyday practices. (Butler 2000, Velicu and García-López 2018)

This is also the starting point for the last issue I want to discuss, which is to delineate the boundaries for resistance in carsharing and sharing more general. In line with Martin (2016), I generally argue that under the current conditions of capitalist society, based on financialization, profit maximization, private ownership and consumption, 'sharing', even in its broadest definition, bears an emancipatory potential by possibly reducing all three of these. (Botsman and Rogers 2010, Rifkin 2014, Bradley and Pargman 2017) Thence, broadly speaking, the boundary when 'sharing' can be seen as a form of (everyday) resistance is where 'sharing' realizes this potential. This said, the exact determination and interpretation of a specific form of sharing as (everyday) resistance or not always needs to be undertaken empirically along the aspects of everyday resistance outlined above. A starting point for this empirical examination can certainly be found in the literature on commons and commoning, as Nikolaeva *et al.* (2019) argue for commoning mobility and the critical assessment of sharing mobilities. In the case of mobility this entails rethinking mobility as (basic and) collective good, which is collectively governed for the well-being of the group of collective owners and broader society rather than the monetary benefit of an individual or commercial company. (Glover 2016, Newman 2016)

I want to briefly unfold this on the example of free-floating carsharing. Free-floating carsharing typically is operated under the roof of large companies from the automotive sector, e.g. *ShareNow* by *BMW* and *Daimler*[27] or *SixtShare* by *Sixt* and only in large cities (e.g. Berlin, Munich, Hamburg, Ruhr area, Cologne and Frankfurt). As free-floating carsharing allows its users to leave cars anywhere within a designated operation area, this area is typically confined to inner-city districts, where the public transport network is dense and distances are within cycling range. Furthermore, these carsharing services operate cars that mostly serve the

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[27] Before merging into *ShareNow*, *BMW* and *Daimler* each operated their own free-floating carsharing offer *DriveNow* and *Car2Go* respectively.

purpose of transporting people and not goods. In relation to the three aspects of commoning, broadly speaking, none of them seem to be developed strongly, most obvious in the non-involvement of the users in planning the operation of the carsharing service. Thereby, commoning practice in terms of governing doesn't take place. Also, commoning meaning doesn't occur as automobilities dominance is not questioned but rather augmented by challenging transport alternatives in inner cities. Lastly, commoning movement, negotiating the amount of movement, isn't supported as the carsharing operators actually have a financial interest in the cars being driven as much as possible. This becomes visible in extensive branding and advertisement as luxury carsharing, (ShareNow 2020) but also in a recent study showing that free-floating carsharing actually results in more cars on the streets instead of less. (Hülsmann *et al.* 2018) Also in the categories of financialization, profit maximization, private ownership and consumption, free-floating carsharing doesn't challenge the hegemonic logic of automobility, promoting faster, further and more movement instead of less. (Waygood *et al.* 2019) In other words, free-floating carsharing as currently operated rather supports than challenges the system of automobility and its practices, dismissing it as a form of everyday resistance.

Now I will turn my attention from building and defending the case for everyday resistance to discussing its primary outcome, the emergence of an alternative mobility culture.

2 Non-commercial carsharing and the emergence of an alternative mobility culture

In the last section I built and defended non-commercial carsharing as a vehicle of and for everyday resistance, through redefining hegemonic everyday practices of automobility. In this section I will discuss the consequence of this and argue that everyday practices and meanings of (auto)mobilities and car ownership are challenged and contested, because non-commercial carsharing, at least locally, establishes an alternative mobility culture.

Albeit it has been implicitly present in much mobility-related research, as an explicit concept mobility culture has a relatively short history. Based on a review of existing uses of the term mobility culture the concept was first fully articulated in 2006 as '*the entireness of the forms of material and symbolic practices related to mobility.'* (Deffner *et al.* 2006, p. 16) While this admittedly is a very broad definition it emphasizes the broad range of things that influence mobility behavior, such as the built environment, technological artefacts, political decisions, societal discourses and ideological orientations and recognizes culture as:

> *"Both symbolic-meaningful (i.e. part of the mental rather than physical perspective) and collective (that is, a property of groups rather than of single individuals); that cannot be reduced to individual behavior or thought or subsumed in social structure; and that is causally interrelated with both behavior and social structure."* (Maxwell 2012, p. 26)

It thereby recognizes the relational nature of mobility behavior as embedded into the material, political and social context of the individual describes how people coordinate themselves in time and space reflecting their mobility-related values and practices and highlights *"the ways in which local cultures of mobility intersect with lifecourse issues and how both have particular material manifestations."* (Doughty and Murray 2016, p. 319, see also Rau 2008, Sheller 2012) Recognizing social and political influences on mobility behavior actually marks a decisive break with previously conventional understandings of mobility behavior as the outcome of individual and rational choices based on a cost-benefit-analysis. (Næss 2006, Kębłowski and Bassens 2017) Furthermore, the concept of mobility culture alludes to the habitual character of mobility behavior, especially in everyday life. (Rau 2008, Schwanen *et al.* 2012, Doughty and Murray 2016, Murray and Doughty 2016)

Because of these aspects mobility culture as a concept provides a missing piece in understanding how change in mobility behavior is taking place. Recently, a study on the mobility transformation of the state of Baden-Wuerttemberg in Germany demonstrated this by showing that only the concurrence of technological changes (e.g. autonomous driving, electrification) and cultural changes (e.g. parting with automobility and excessive movement) allows to reach goals of climate protection and sustainability: *"The path towards globally and in Baden-Wuerttemberg bearable mobility within ecological and sanitary limits […] can most likely be successfully pursued with a significant reduction of car travel and car stock."* (Blanck *et al.* 2017, p. 261 author's translation) Thence, it is not enough to just provide additional cycling infrastructure, improved quality of public transport or new means of (organizing) transport. Additionally, and actually much more difficult to achieve, changing mobility behavior entails altering the normalized and habitualized meanings and practices of mobility – the culture of mobility – that individuals, planners, politicians and society as a whole follow in everyday life. (Soron 2009, Schwanen *et al.* 2012, Sheller 2012, Bissell 2014, Doughty and Murray 2016, Murray and Doughty 2016) In the remainder of this sub-section I will trace how the process of everyday resistance through non-commercial carsharing is changing these meanings and practices thereby establishing an alternative mobility culture alongside the hegemonic culture of automobility.

Indications for the emergence of an alternative mobility culture

First, I want to summarize the aspects of the emerging alternative mobility culture which were already described previously, before bringing in some complementary aspects from the empirical material. In the first empirical chapter I described how the meanings of the car and (auto)mobility change from status symbol to object of utility and from freedom to necessity, from which a different rational for using the car based on necessity and need instead of prestige and habit emerges, reducing everyday car usage. This is further supported through the ecological re-embedding of automobility and the total critique of automobility which were described in the second empirical chapter. The third empirical chapter described non-commercial carsharing as a communal undertaking, which stands in stark contrast to usually individually organized

automobility. This got even more pronounced in the fourth empirical chapter, where non-commercial carsharing was interpreted as a process of commoning. The emerging alternative mobility culture thus is characterized by a different individual rationale towards car use based on different meanings of the car and automobility, increased environmental awareness and communities that collectively use, own and care for the common cars.

I want to strengthen this argument with some additional empirical material indicating further manifestations of this alternative mobility culture in relation to shifting automotive emotions, a different relationship to the national car culture and the role of technology. Together with the above aspects, this leads to a linking of mobility behavior to other socio-cultural patterns and a significant reconfiguration of the automobile subject, driving the firm establishment of this alternative mobility culture and the processes of everyday resistance, commoning and re-embedding.

The first additional aspect are new emotions in relation to the car and automobility. The car can be said to be "*deeply embedded in ways of life, networks of friendship and sociality, and moral commitments to family and care for others*" (Sheller 2004, p. 236) and has to be understood in relation to a wide set of emotions towards its use, so that "*we not only feel the car but we feel through the car and with the car.*" (Sheller 2004, p. 228) The car is more than a lifeless object. It rather needs to be conceptualized as a personal and private space that is part of "*embodied sensibilities that are socially and culturally embedded in familial and sociable practices of car use.*" (Sheller 2004, p. 222) In other words, driving a car also "*simply feels good*" (Kent 2015, p. 734) and provides a space for socialities while cruising, on the way to work or during family activities (Collin-Lange 2013, 2014) Therefore, these 'automotive emotions' are an important aspect for establishing and stabilizing the hegemonic culture of (auto)mobility. (Sheller 2004, Paterson 2007)

I already discussed how direct automotive emotions such as feeling the car and through the car tend to decrease through non-commercial carsharing. Yet, as carsharers tend to lose the ability to feel the car as an extension of their body, other automotive emotions are coming to the fore, such as not enjoying to drive or emotional opposition against the car. Examples for an emotional opposition against the car in relation to resource use, efficiency of the car and traffic jams abound and probably unsurprisingly quite some of the carsharers didn't really like driving or had negative associations with driving a car. Jean-Paul sees driving long distances by car as a stress factor and likewise Ulrike actually enjoys when she doesn't have to sit in a car in her free time because she has to use it a lot in her job in elderly care. Apart from opposing driving long distances, car driving was also negatively charged because of too much traffic. Standing in traffic was described as precious lifetime that is lost, as the worst case, as more annoying than public transport, not as fun or as "*an absolute nightmare.*" (Karin) Only one interviewee explicitly told me that he still likes to drive a car sometimes: "*I also drive a car when I want to enjoy it. I also don't want that to be taken from me.*" (Karl, Vaterstetten) However, with saying this, he wants to make clear that carsharing isn't about sacrificing the

car, but about creating a different consciousness of it as his next sentence was that one still *"needs to be reasonable about car usage and have alternatives in mind."* (Karl, Vaterstetten)

Additionally, the practice of non-commercial carsharing itself can become the basis for new feelings and identities. During my conversation with Nancy and Louis we came to talk about StattAuto and other organized forms of carsharing. Both of them agree that organized forms of carsharing are not what suits them as they are bad in following rules in general and especially rules made by other people:

Louis: *"This suits our personalities better this system as with the…"*

Nancy: *"Nobody can tell us which rules to make and how we do this carsharing and that I think is somehow the most important thing. Because we are not at all rule-following people."* (Mountain Hut)

Thence, non-commercial carsharing can actually serve as an expression of personality and identity the same way as private car ownership can. Another explicit example for this is Ivan for whom sharing the car is a sign of being able to work at humanity questions in group contexts and a way of opposing himself to the capitalist mobility system. Also Antonio is a good example. He told me that being a board member of the association is his hobby and that "*it is a good feeling, that it works and it also just is fun so to say to develop it further.*" (Antonio, Markt Schwaben) By making the association his hobby it becomes part of his self-description and identity. Additionally, as I described earlier, non-commercial carsharing elicits feelings of responsibility towards the carsharing cars, of trust towards the other carsharers and of solidarity for the car needs of the fellow sharer.

Therefore, non-commercial carsharing is reconfiguring the embeddedness of the car in everyday life through shifting automotive emotions from individually 'feeling the car' to collectively caring for the shared car. Furthermore, non-commercial carsharing can provide the basis for new references to personality and identity in relation to the car. Following own rules in a private carsharing arrangement can become a signifier for personality and seeing the carsharing association as hobby makes carsharing part of identity formation. By not dismissing the affective dimensions of automobility and shifting automotive emotions to feeling with and for the shared car, the emerging alternative mobility culture is more stable and favors the development of alternative subjectivities, enabling a broader reconstitution of automobility: *"Who 'we' are […] helps us survive in a world of complex relations, norms and political-economic structures."* (Velicu and García-López 2018, p. 62)

The second additional aspect is related to the just elaborated automotive emotions and concerned with the carsharers changed relation to the broader national car culture. Some carsharers developed a rather critical perspective on the German car culture related to the critiques of automobility presented previously. This contrasts with a genuinely high significance, importance and status of the car in planning, politics, industry and broader German society. (Schwedes 2017) Karl described this probably the most drastic when comparing German car culture and obsession to gun ownership in the United States:

"It isn't questioned anymore. It just is as it is. It looks totally stupid from the outside…nobody from outside the United States understands it. Of course, cars are a bit different, but nobody from the outside understands, why we don't have a speed limit on highways. All the world has it, but it is completely impossible here." (Karl, Vaterstetten)

Further, Karl thinks that Germans especially have a mental barrier against life without a car, wherefore convincing people of carsharing doesn't only require a lot of persuasion but also makes carsharing models like the Swiss one difficult to implement. *"There is a reason why it is like it is in Germany"* (Karl, Vaterstetten) and this reason is the strong liaison of automobility with the German hegemonic mobility culture. (Canzler *et al.* 2018) Also Robert regards this connection as problematic and relates it to the strong role of car production in Germany: *"I think in Germany [carsharing] is difficult, because you produce cars yourself."* (Robert, Markt Schwaben) Importantly and as mentioned earlier Robert relates carsharing to a different urban structure with "*a completely different streetscape and a more chilled atmosphere."* (Robert, Markt Schwaben) Thence, non-commercial carsharing on one side requires a different relation to the national mobility culture dominated by the car in order to spread. However, when carsharing started to grow, it on the other side enables the development of an alternative mobility culture not dominated by and configured around the car.

The last aspect of the emerging alternative mobility culture is a different understanding of the role of technology. I already discussed how non-commercial carsharing enables the establishment of new proximity relations amongst the carsharers in the associations and the private sharing arrangements: *"You have a group of participants who follow the same goal and put their doing into a larger context. […] It is a form of community and new proximity relations emerge because I have an interdependency and we take in some of the external costs again."* (Ivan) These proximity relations, however, are not only built up between people, but also with the means of production, which is part of re-embedding automobility into its societal context. (Giddens 1991b) In the case of mobility the most tangible means of production are the technological artefacts movement is realized with. Practicing carsharing thus is also an expression of a different relationship with technology. Currently mobility technologies rather lead to domination and force people into radical monopolies and dependencies, where people work for the respective technological tool instead of the way round. (Illich 1974, 1975, Miller 2001b, Cass and Manderscheid 2010, Dowling and Simpson 2013) Under this hegemonic relationship with technology sharing can lead to even more consumption of distance as visible in the increase of car-kilometers through *Uber* and *Lyft* or the increased number of cars through *DriveNow*. (Balding *et al.* 2018, Hülsmann *et al.* 2018) Yet, in a regime of shared ownership and with the premise of sufficiency non-commercial carsharing can enable a new relationship with technology:

"You create a new proximity relation with the means of production. […] It is about the impact technology has on us as social beings. And the idea of sharing first has to subordinate to sufficiency thinking or social

thinking to a certain extent. And when sharing is a convivial tool, in the sense of it is a tool with which I can work [...] then I think it is helpful [for society]." (Ivan)

Thence, in the emerging alternative mobility culture the role of technology is more akin to an enabler of societal goals instead of a yardstick for how society should develop. This new role of technology entails broad implications for the implementation of future technologies, such as autonomous driving or flying cars. Essentially, the focus shifts from the mere possibility of technologies to the societal and ecological benefits of technology. In other words the alternative mobility culture that emerges from non-commercial carsharing clearly distinguishes technological progress from social progress and emancipation, while making the first serve the latter. (Illich 1975, Wajcman 2004, Prainsack and Buyx 2017, Hester 2018)

Overall, the alternative mobility culture that is established through this process of everyday resistance can be boldly summarized as: 'We care for our car to use it when we need it, in order to protect the environment' in opposition to the hegemonic mobility culture: 'I love my car and want to drive it everywhere and every day for everything.' Figure 8.2 summarizes the aspects of the alternative mobility culture in less colloquial terms. Also visible in the figure are the two implications of the emerging alternative mobility culture that I want to emphasize and which position non-commercial carsharing as an important factor for a citizen-driven, bottom-up socio-ecological mobility transition. (Sheller 2018)
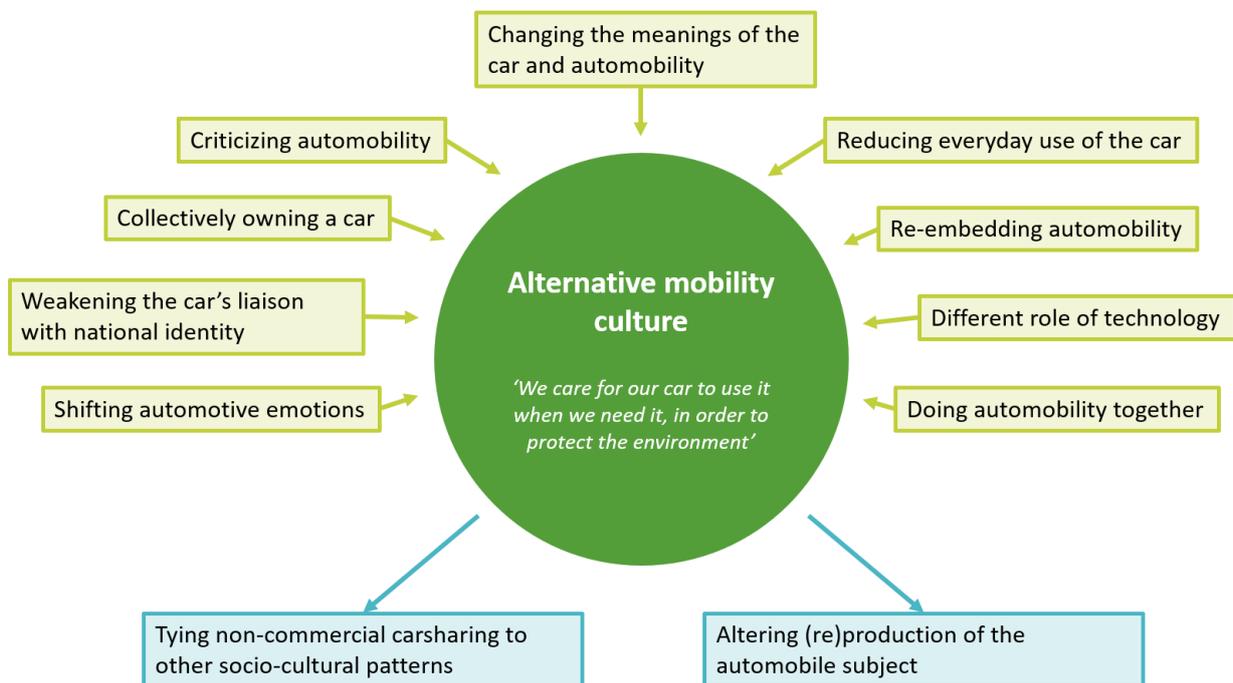

Figure 8.2: The aspects and implications of the emerging alternative mobility culture.

Implications of the emerging alternative mobility culture

First, I want to follow an argument by Mimi Sheller that "*transformations of the dominant culture of automobility will begin only when local innovations in designing and dwelling with cars are tied to patterns*

of gender expression, racial and ethnic distinction, family formation, urbanism, national identity and transnational processes." (Sheller 2004, p. 236) In other words, local innovations in car use and ownership need to become re-embedded into their social and ecological context. Throughout this study I specifically referred to how non-commercial carsharing is re-embedding the system of automobility socially and ecologically. Thereby, I showed how non-commercial carsharing presents one of these local innovations by changing the meanings of the car and automobility, contextualizing the impacts of automobility and commoning automobility through a process of everyday resistance. These aspects in themselves already tie this local innovation to patterns of urbanism and transnational processes, through reshaping everyday movement in the city and connecting non-commercial carsharing to global environmental processes. Furthermore, however, the emergence of an alternative mobility culture relates non-commercial carsharing also to questions of national identity and substantially alters the affective repertoire of automobility, potentially influencing gender expression, racial and ethnic distinction, family formation and other patterns, which however has not been the focus of this work. Thence, non-commercial carsharing not only changes concrete practices and meanings of everyday automobility, but also influences its relation to other socio-cultural patterns. Thereby, the production and reproduction of the automobile subject is reconfigured, which is the second implication I want to emphasize.

In very general terms the automobile subject describes a type of person, who is "*oriented towards the sort of movement which cars make possible*" (Paterson 2007, p. 121) and can be seen *"as the prototype of the modern citizen: full membership is acquired through the initiation rite of the driving test."* (Manderscheid 2018, p. 27, see also Miller 2001b) Thereby, the automobile subject emerges from the hybrid of the car-driver and is strongly interrelated with the meanings and emotions individually and collectively attached to the car and automobility through cultures of mobility: (Randell 2017, Manderscheid 2018) "*The individual psychological investment in the car can be said to arise out of the sensibility of an entire car culture.*" (Sheller 2004, p. 225) This connects to the argument by Paterson that "*greening automobility entails a personal odyssey to remake one's identity and re-engage others according to different social logics."* (Paterson 2007, p. 223) Thus, in order to change the system of automobility, its social relations inscribed in the automobile subject, need to be reconfigured through the *"ongoing re-making of selves and of modes of existence that are not supported by prevailing norms."* (Velicu and García-López 2018, p. 68) The frequently described ambivalence in these processes is a clear indicator and result of this ongoing reconfiguration of the automobile subject and the tension between hegemonic and alternative automobile identities and subjectivities: *"Critique of everyday life encompasses […] the decision to render ambiguities unbearable and to metamorphose what seems to be most unchangeable."* (Lefebvre 2014, p. 520)

The personal odyssey of reconfiguring automobile subjectivity is strongly supported by the emergence of an alternative mobility culture, as it provides norms, habits, routines and material artefacts as moorings

and waypoints to recapture and re-embed *"the automobile subject […] detached and detaching itself from social, material, and historical contexts."* (Manderscheid 2018, p. 27, cf. Giddens 1991b) I described how, many of the carsharers experience a remaking of their automobile identity and subjectivity through giving up car ownership partially or all together to own them collectively, reducing car usage in everyday life, having to plan their mobility, changing their mobility behavior, feeling annoyed and pressured by the car and developing new automotive emotions. Furthermore, *"collective subjectivities […] emerge in commoning processes"* (García-López *et al.* 2017, p. 91) of commoning meaning, movement and practice of mobility. Therefore, the emergence of an alternative mobility culture is part of the counter-hegemonic *"constant process of struggle around a certain articulation of common(s) senses"* (García-López *et al.* 2017, p. 103) and the grounds for their materialization in the alteration of everyday practices.

Overall, the emergence of an alternative mobility culture and its two implications of tying practices of non-commercial carsharing to other socio-cultural patters and the reconfiguration of the automobile subject are, on one side the outcome of the processes of change of everyday resistance, re-embedding and commoning. However, on the other side the alternative mobility culture plays a vital role in stabilizing these practices, increasing their reach and mediating the shift from altering individual practices to changing the social relations and broader cultures of mobility.

To conclude this discussion I want to summarize my main argument: Non-commercial carsharing is 'puncturing automobility' (Kent and Dowling 2013) and alters its continuous reproduction by reconfiguring automobile identities and subjectivities, through subtle and quiet but nonetheless resistant practices. (Chatterton 2016, Cohen and Hjalmarson 2018) It thereby establishes an alternative mobility culture and reconfigures the automobile subject, simultaneously working *"with and against the infrastructures, cultures and socialities of private car dependence"* (Dowling *et al.* 2018, p. 12) in order to overcome them. This alternative culture of mobility seems to be necessary to reach ecological and social goals: (Blanck *et al.* 2017, O'Neill *et al.* 2018, Waygood *et al.* 2019)

> *"The crucial questions – how to avoid or shorten transport and how the necessary transport can be undertaken with the least social and ecological impact? – are not posed in the dominant discourse on a 'mobility transition'. This is not surprising, as these are not answerable through eco-efficiency or eco-effectiveness. Answering them would rather require to treat questions of mobility within a broader societal context and under aspects of sufficiency."* (Brand and Wissen 2017, p. 145; author's translation)

Thus, non-commercial carsharing plays a promising role for an overall reconstitution of automobility within a socio-ecological mobility transition from below, which I will discuss in the final chapter.

Chapter Nine *Non-commercial carsharing and the socio-ecological mobility transition*

In the last chapter of this book I first provide a conclusion of the previous discussion, outlining how non-commercial carsharing is influencing local change in the mobility system in the form of a socio-ecological mobility transition. Following, I will discuss the political and scientific implications of my work by discussing it with current political and scientific discourses on the mobility transition, by giving recommendations on how to foster non-commercial carsharing as a local process of change and by giving an outlook for future research and lessons learnt.

1   Non-commercial carsharing and social change

In the last chapter I discussed how an alternative mobility culture is emerging from the practices of non-commercial carsharing. This alternative mobility culture ties non-commercial carsharing to other socio-cultural patterns and reconfigures the reproduction of the automobile subject. I further pointed out how an alternative mobility culture is as necessary as and probably even more important than technological developments for a mobility transition that meets social and ecological goals. (Blanck *et al.* 2017, Yaka 2019) Without changing the deeply ingrained practices of everyday automobility the overall mobility system will be difficult to change and likely remains within the path-dependency of automobility until its potential chaotic breakdown. (Urry 2007, 2016, Dennis and Urry 2009, Low and Astle 2009, Soron 2009, Schwanen *et al.* 2011, Geels *et al.* 2012) Yet, I have shown that non-commercial carsharing challenges many of these destructive, but enduring and hegemonic practices of automobility through the processes of everyday resistance, re-embedding and commoning and thus establishes alternative mobility practices and an alternative mobility culture more in line with a socio-ecological mobility transition. (Sheller 2018)

At this point, I want to specify what I refer to as a socio-ecological mobility transition. In the introduction of this study I described the many problems of the current mobilities system based on the system of automobility at its center. The logic of 'faster, further, more' implicit and explicit in the mobilities system's meanings and practices fuels capitalist expansion and accumulation, while also providing the means for connecting spheres of accumulation, reassuring their constant reproduction. (Harvey 2006, Paterson 2007, Schwedes 2017) Therefore, the current mobility system in general and automobility in specific play a crucial role in stabilizing the ongoing capitalist, profit and market-driven impairment of the social and ecological conditions of production: *"To allow the market mechanism to be sole director of the fate of human beings and their natural environment […] result[s] in the demolition of society."* (Polanyi 2001, p. 76) Thus, the need for changing the mobility system towards a system that doesn't impair the social and ecological conditions of production – re-embeds them so to say – is urgently necessary. (Newman 2017, Sheller 2018, Waygood *et al.* 2019) And albeit such a socio-ecologically just mobilities system might not be fully realizable or realistic,

the term socio-ecological mobility transition refers to the ongoing process and movement for achieving this goal. Certainly, this entails much more than changing the hegemonic everyday practices of automobility:

"A transition toward sustainable mobility therefore requires more than changing how much energy we use in everyday life in our cities. Individual low-carbon consumption will not change the world unless we tackle the underlying global inequalities which make contemporary ways of life unsustainable. [...] To reduce global greenhouse gases depends on shifting the entire material assemblage of modern life." (Sheller 2018, p. 152)

Nevertheless, changing and re-embedding high-carbon everyday practices of automobility in the Global North is a first and important step in this transition, especially as it potentially paves the way for broader change through the alternative mobility culture that emerges from these changes. (Gössling and Cohen 2014)

Apart from the emergence of an alternative mobility culture, I further base the importance of changing everyday practices on the methodological model of change conceptualized in the TMSA, social practice theory and the theory of everyday life: (Joseph 2003, Shove *et al.* 2012) *"Changing the world rather than interpreting it means not only changing the outside world but, above, all, changing the everyday."* (Lefebvre 2014, p. 535) The TMSA acknowledges the potential for change on the level of individuals and society, independent from their specific interaction. However, I take as its main implication that the potential for change is also present in the social relations between the individual and society, which are made up of everyday practices and meanings. Even further, I argue that altering everyday practices and meanings is an essential point for enduring processes of change. (Joseph 2003) Change that takes place on the societal or individual level independently might affect their internal social relations, however the social relations between society and the individual can also easily remain the same. This can be crudely exemplified in current developments within the (German) mobility system. (Dennis and Urry 2009) On the level of society there is a push towards electric drive trains and autonomous vehicles by politics, parts of science and civil society and recently industry. However, in case everyday practices of automobility based on individual car use and ownership don't change, this push might easily result in worsening the social and ecological damages of the mobility system. (Thomopoulos and Givoni 2015, Bissell *et al.* 2020) Contrastingly, change taking place on the individual level, e.g. an orientation towards other forms of mobility than the individual car, is confronted with the problem, that the only possibility for affecting the societal level is by altering the social relations between society and the individual. This however is unreachable for each individual by themselves, wherefore individual change without collective organization can easily remain without any effect beyond the individual. (Soron 2009, Doughty and Murray 2016) Thence, directly intervening into social relations through collectively redefining everyday practices and meanings appears a fruitful entry point for changing society and the individual congruently, altering how society is collectively reproduced through and transformed by the individual. (Curry 2002, Danermark *et al.* 2002, Joseph 2002, 2003, Shove *et al.* 2012, Wheatley 2019)

Naturally, altering the everyday practices and meanings that make up these social relations can take manifold forms. Throughout this work I offered different examples and conceptualizations of processes of change on an individual and collective level. While I chose everyday resistance as my main analytical concept and perspective, this doesn't mean that other conceptualizations are less valid. Rather they complement each other, as they refer to different levels or point towards broader contexts. In the remaining part of this section I will discuss the interrelations between the three applied conceptualizations – re-embedding, commoning mobility and everyday resistance – and their contributions to the socio-ecological mobility transition.

Re-embedding refers to two interrelated processes. (Giddens 1991b, Barham 1997, Polanyi 2001, Gibson-Graham *et al.* 2016) First, automobility is again connected to its ecological and social context, which now plays an important role in decisions on car usage and ownership for the carsharers. Second, the hegemony of automobility is locally challenged through the counter-movement of non-commercial carsharing in the form of *"societal protection from [the market's] adverse effects […] to restrain the action of the market […] collectively in a return movement."* (Barham 1997, p. 241) These two processes clearly influence local change in the mobility system and its dis-embeddedness from nature and society revealing the *"deeper reality [of consumer society]: the manufacture of consumers by those who hold the means of production and who produce for profit."* (Lefebvre 2014, p. 321) However, unlike the concept of everyday resistance re-embedding doesn't capture how these two processes take place *"through reiteration, rearticulation or repetition of the dominant discourse [and practice] with a slightly different meaning."* (Lilja and Vinthagen 2018, p. 220) Thence, re-embedding is rather concerned with the effects of everyday resistance and thereby already points to the potential influences on the broader mobility system.

The concept of commoning also points towards these further reaching influences as it moves attention

"towards exploring a range of possibilities of reconfiguring the political debate on planning fairer and more livable cities. Such a shift necessarily brings various forms of "transition" together – particularly those focused on carbon reduction and those rooted in long-standing work on mobility justice." (Nikolaeva *et al.* 2019, p. 12)

Additionally, commoning mobility focuses on commoning meaning, movement and practice as *"everyday performances [which] are precisely what prefigures and gives concrete meaning to the alternative commons senses that counter-hegemony requires"* (García-López *et al.* 2017, p. 103) and thereby brings ecological and mobility justice transitions together. (Yaka 2019) Yet, unlike everyday resistance the concept of commoning often focuses on practices with a clearly articulated political focus and intention. Therefore, forms of commoning occurring without political consciousness might remain unacknowledged, shifting and actually limiting the potential for change from everyday practices to actors with a specific political consciousness.

Consequently, everyday resistance captures how the influences on the structural level are produced through alterations of everyday practices and meanings and highlights how these resistant practices might also occur without their articulation as political goals. But certainly for explaining how practices of everyday resistance eventually result in the collective alteration of the reproduction of social structures re-embedding and commoning mobility are useful and necessary concepts as they provide the conceptual connections for influencing the wider system as a necessarily collective and inherently political process.

Thence, non-commercial carsharing contributes to the socio-ecological mobility transition by locally altering everyday practices and meanings of automobility which are part of the social relations through which the system of automobility is reproduced in and transformed by the individual and its automobile subjectivity. Again, I want to make clear that this alone isn't sufficient for a successful mobility transition, but still it is a necessary condition. (Shove *et al.* 2012, García-López *et al.* 2017) Especially in situations where changes to the system of automobility and capitalist mobilities are fiercely opposed by political and economic actors and institutions, (Gössling and Cohen 2014, Cohen *et al.* 2016, Schwedes 2017) the forms of change I explored in this work can together provide a meaningful lever for a socio-ecological mobility transition originating from below, meaning from ordinary people and their everyday lives.

The process of everyday resistance I argue for, captures how the practices of non-commercial carsharing alter the hegemonic everyday practices of automobility. This specifically takes place through an entanglement with the everyday powers of automobility, wherefore non-commercial carsharing is working with and against automobility at the same time. (Dowling and Simpson 2013, Johansson and Vinthagen 2016, Dowling *et al.* 2018) It provides alternatives to homogenizing elements of capitalism and building blocks for alternative futures and identities to those coerced by and into automobility. (Pink 2009, Chatterton and Pickerill 2010) This results in social action and agency in the form of conscious production through both a critique of structures of dominating automobility and a materialized transformation of social structures through the alternative practices of non-commercial carsharing. (Joseph 2003, Cohen and Hjalmarson 2018) Overall, practices of everyday resistance in the form of non-commercial carsharing form the basis for the emergence of an alternative mobility culture stabilizing the practices of non-commercial carsharing while simultaneously opposing hegemonic practices of automobility, especially private car ownership.

Through re-embedding, as applied in my thesis, the social and ecological context of automobility is brought into the carsharers consciousness. Albeit deducible from a mobilities perspective, the connection between threatened livelihoods in Azerbaijan, Georgia and Turkey due to an oil pipeline, the setting free of nuclear waste on the sinking Marshall-Islands due to climate change and the Sunday car trip to the bakery is difficult to grasp and integrate into everyday practices of automobility. (Marriott and Minio-Paluello 2013, Gault 2019) Through the strong ecological focus of non-commercial carsharing, however this becomes easier or even unnecessary as this context is materialized in the alternative practices and meanings of non-

commercial carsharing and becomes an explicit concern within the carsharing community. The same holds true for the socially disintegrating forces of automobility through individualizing movement. Through strengthening individual and collective awareness of the social contexts of automobility it becomes re-embedded into these contexts. (Giddens 1991b, Polanyi 2001, Gibson-Graham *et al.* 2016) This results in a counter-movement against the dis-embedding aspects of the system of automobility, first individually then collectively. (Barham 1997) Thereby, the two processes of re-embedding provide an individual starting point for thinking and doing something about the problems of automobility, while pointing towards the alternative of a socio-ecological mobility transition through practicing non-commercial carsharing.

Commoning continues this starting point and deepens the opposition to hegemonic practices of automobility through the collective ownership and management of the cars suggesting not only that *"the material and moral parameters of practical (everyday) life, which are determined by private property, must be transformed,"* (Lefebvre 2014, p. 195) but also proposing *"a reconsideration of the value of mobility and its collective repercussions."* (Nikolaeva *et al.* 2019, p. 12) Furthermore, commoning emphasizes the political content of the practices of everyday resistance not only in terms of the sub-political content of everyday life, (Beck 1986, Poferl 1999) but also in terms of a broader politics of mobility, (Cresswell 2010) *"a way to repoliticize the organization of community life"* (García-López *et al.* 2017, p. 102) and the building of *"mutual livable lives."* (Velicu and García-López 2018, p. 67) Thereby, commoning mobility brings the individual processes of everyday resistance and re-embedding on a collective and more institutionalized level. Mimi Sheller even argues that these practices of commoning might provide *"ways to undermine the uneven and differential mobilities that have fragmented, and privatized, and militarized our bodies, streets, cities, infrastructures, nations, and planet."* (Sheller 2018, p. 162) And on a very small and local scale, non-commercial carsharing is undermining hegemonic mobilities in everyday life, but is also affecting local politics. I provided many examples of how the undermining of hegemony takes place in everyday life, wherefore I want to briefly give two examples of how non-commercial carsharing finds its way into local politics.

The first way is relatively common amongst the carsharing associations. Most of them are in contact with the municipal administration and the local mayor and receive mostly symbolic support through the provision of parking spaces or meeting rooms. This happens independent from any political affiliation as the local politicians see carsharing as cheap and easy way for them to tackle their traffic problems, which however keeps them from providing money for founding associations or buying new cars. Furthermore, some municipalities and even mayors are association members themselves and use the carsharing cars for business trips, integrating carsharing into the administrational everyday and making it more visible for the local population.

The second way of making carsharing a topic in local politics is through a cooperation of all associations with the region and the regional transport provider. Together they set up a project with the goal to spread carsharing to every municipality above 1,000 inhabitants in order for each inhabitant being able to reach two carsharing cars within one kilometer and for 10% of the population in the region using it. (Carsharing Ebersberg 2020) Through the project, the region supports the founding of new associations with templates of administrational documents, help in accounting and financial backing through credits. Karl, who is the initiator of the project, however, has an additional goal which is to prove that carsharing is possible in rural and small municipalities:

> *"We want to show with our project, so to say bracket this one point that comes very quickly: 'We would like to have carsharing, but we are such a small community, this doesn't work.' This comes really quickly and then the initiative stops and that we want to dispel with our project. […] Then you can say it doesn't work because we don't manage to do it, but you say it doesn't work in principle."* (Karl, Vaterstetten)

Thence, the process of commoning mobility present in non-commercial carsharing enables the scaling up of its ideas and goals through increasing political influence, cooperation and engagement: *"[The old mayor] was sympathetic, but he didn't say it aloud. But now, the current mayor walks into the meeting with all the other mayors from the region and makes advertisement for us: 'This is awesome, it works, do it!'"* (Rosa, Markt Schwaben)

To sum up, the three processes of everyday resistance, re-embedding and commoning mobility complement each other. It is through their co-occurrence and interrelation that non-commercial carsharing is more than individual coping with hegemonic automobility, but rather an active redefinition of everyday practices of automobility which alters the social relations reproducing society and thereby mobilizes the socio-ecological mobility transition in everyday life from below.

Admittedly, this is a very positive outlook and conclusion, however *"the* belief *in the possibility of radical alternative to existing institutions [… is] an important condition for emancipatory social change."* (Wright 2010, p. 8, emphasis in original) Without visions of a better future and 'real utopias' guiding the struggle for socio-ecological and mobility justice, it is hard to keep the head over water. (Urry 2016, Yaka 2019) Of course, the cases of non-commercial carsharing presented in this study could be an empirical exception and odd conjuncture of tendencies in that they put up at least a partial and local challenge and contestation of the system of automobility and capitalist mobilities. Nevertheless, the tendencies and mechanisms in which the concrete counter-hegemonic everyday practices are rooted, are conceivable in other contexts. Through this study, if nothing else, detecting and nurturing the subtle processes of change in everyday life in order to build a counter-movement against destructive automobility, became part of the realm of the possible and a desirable future. The last two sections of my study will outline how this can be supported, fostered and investigated in politics and research.

2 Implications of non-commercial carsharing for mobility discourses and policy making

In this section I outline implications of my work for mobility discourses and policy making. First, I will discuss my results and conclusions with current discourses on sustainable mobility and the mobility transition. Second, I will delineate policy recommendations based on my fieldwork.

<u>Implications for current discourses on sustainable mobility and the mobility transition</u>

This exploration of non-commercial carsharing sheds a different light on ongoing discourses on sustainable mobility and a sustainable mobility transition. Until today, these discourses are overly techno-centric, especially in political, industrial, economic but also social arenas. (Miciukiewicz and Vigar 2012, Bergman *et al.* 2017, Kębłowski and Bassens 2017) The automotive industry, tech-companies and governments around the world are increasingly focusing on the provision of (new) technologies, such as electric, flying and/or autonomous cars, integrated public transport ticketing or new sharing services in urban centers, which are hailed as harbingers of sustainable mobility. (Okuda *et al.* 2012, Urry 2013, Viechnicki *et al.* 2015, Endres *et al.* 2016, Marvin *et al.* 2016, Bissell *et al.* 2020) Hereby, the problem of contemporary unsustainable mobility is understood as a problem of efficiency, which can be solved first and foremost through technological fixes. (Kaika and Swyngedouw 2000, Tucker 2013, Spinney 2016, Brand and Wissen 2017, Kębłowski and Bassens 2017, Schwedes 2017, Hensher 2018) The focus of the automotive industry on providing new technologies (for driving a car) without considering the social and ecological consequences could still appear comprehensible. However, the focus of governments on the sole provision of (new) technologies without setting a frame for their usage seems like a deliberate subjugation to the power of the system of automobility and the logic of capitalist mobilities of 'faster, further, more'. This work, as many other critical (mobilities) literature, punches several holes into this techno-centric understanding and indicates an alternative focus on sufficiency through changing everyday practices and implementing technologies in a supportive instead of a prescriptive way.

First, non-commercial carsharing is a decidedly low-tech approach. In its beginnings carsharing was organized via telephone or even paper-based and also today the technical means are comparably simple and oriented at what is necessary and not what is potentially possible. This already points out, how complex and sophisticated technologies, e.g. key-cards, GPS-systems, smartphone apps, aren't crucial for organizing carsharing or the sustainable mobility transition. Rather the used technology needs to be appropriate for the purpose. This can be further exemplified in a small thought experiment, comparing the impacts of everybody doing carsharing with conventional cars and the impacts of replacing all conventional cars with electric cars. While the former results in a significantly reduced number of cars and car travel and the related global and local impacts, the later merely changes local emissions of greenhouse gases and other air pollutants. Henceforth, not technology needs to change but how it is used and appropriated: *"The possibilities afforded*

by technological advances do not inhere in individual artefacts but are contingent upon the networks in which they are located." (Wajcman 2004, p. 118)

The second point goes deeper into the purpose of technology. Surely, for doing free-floating carsharing in anonymous urban settings, the applied technology is perceived necessary, to protect against theft, to find and book a car, etc. However, in relation to the supposed purpose of carsharing, the reduction of cars and car traffic, it rather seems that free-floating carsharing exists, because there are technological means and needs for capital accumulation and not because it fulfills the supposed purpose. (Schmöller *et al.* 2015, cf. Spinney and Lin 2018 for free-floating bikesharing) As this work has shown, not the technologies of non-commercial carsharing lead to a reduction of car use, but the changing meanings of the car and automobility, the social and ecological re-embedding of automobility, the community around the cars and the collective car ownership. In other words, not technologies in themselves alter everyday practices, but how they are used, appropriated and embedded in everyday life. (Illich 1975, Wajcman 2004) Simply putting technologies 'out there' to solve the problem, almost certainly results in the co-option into hegemonic practices, (Martin 2016) in the best case leading to efficiency gains. However, as much research has shown, without changing practices efficiency gains become obsolete through rebound effects of increased consumption. (van den Bergh 2012, Font Vivanco *et al.* 2016) Thus, the implementation of new mobilities technologies requires not only serious attention to the context they are embedded in but also a decidedly normative and regulatory framing to avoid the deepening of existing inequalities. (Graham and Marvin 2001, Morozov and Bria 2017)

Third, non-commercial carsharing shows how a mobility transition could look like in more rural areas. Most discourses on the mobility transition are not only focused on technology but also on urban settings, e.g. smart city and smart mobility discourses. (Vanolo 2014, Hollands 2015, Benevolo *et al.* 2016, Marvin *et al.* 2016) While many of the innovative sharing concepts are exclusively applied in bigger cities, the car is usually considered to remain central to mobility outside of cities. (Lucas *et al.* 2016, Mattioli *et al.* 2016) However, the existence of the carsharing associations since many years proves that also in rural areas a shift away from automobility is possible, in connection with a well-developed public transport network. The ongoing mantra of the car-dependent rural population, while true to a certain extent, is neither absolute nor set in stone, but rather produced by the absence of viable alternatives in the form of carsharing associations in connection with public transport. Thereby, non-commercial carsharing provides a perspective for a socio-ecological mobility transition not only to residents in urban centers but for everybody and more importantly also by everybody.

This brings me to the fourth and last point. Through the collective governance and community character based in civil society non-commercial carsharing offers the potential for a just and inclusive mobility transition that is oriented towards the benefit of citizens because it is organized by them. (Glover 2016, Kaika 2017, Sheller 2018, Nikolaeva *et al.* 2019) While discourses on sustainable mobility refer to social and

ecological goals, the need for and creation of future markets for smart mobility to reach these goals is stressed most. (Viechnicki *et al.* 2015) In this economic framing, the business opportunities for profit creation by companies are not only discursively emphasized but are also all too often materially realized at the expense of social and ecological goals. (Söderström *et al.* 2014, Hollands 2015, Mattioli 2016) In contrast, non-commercial carsharing shows that profit creation and orientation aren't crucial for reaching social and ecological goals in the sustainable mobility transition, but rather the commitment and engagement by ordinary citizens to alternative everyday practices and the establishment of an alternative mobility culture. (Richardson 2015, García-López *et al.* 2017)

Thence, in contrast to the mainstream discourse on the sustainable mobility transition advocating for new and sophisticated technologies and future markets for smart mobility, the case of non-commercial carsharing presented here shows that neither of these are necessary for transitioning mobility. Quite the contrary. The mobility transition, on a non-structural level, most of all depends on the alteration of everyday practices of automobility such as private car ownership, which non-commercial carsharing certainly succeeds in. Serious doubt, however, needs to be cast upon the idea that the simple replacement of conventional cars with electric or autonomous cars or the mere development of future markets for smart mobility can ever achieve this, not even considering the ecological unsustainability of this endeavor. (Newman 2013, Brand and Wissen 2017, Hall and Lutsey 2018) Furthermore, the case of non-commercial carsharing points to a neglected actor in the discourses on sustainable mobility and the mobility transition: the citizen. In dominant discourses the citizen, if s/he appears at all, either appears as passive, obediently using the new technologies or as unruly, irrationally sticking to hegemonic everyday practices of automobility. (Doughty and Murray 2016) However, through non-commercial carsharing the citizen becomes active and consciously shapes automobility and its transition according to their re-embedded needs consistent with the boundaries of society and the planet. (Bookchin 2015b)

(Policy) Recommendations for fostering (non-commercial) carsharing

However, the active role of the citizen makes it relatively difficult to support and foster non-commercial carsharing from a political and municipal side without blighting it. The above mentioned project with the region of Ebersberg is based on many experiences in founding associations, which weren't always successful. It occurred that when the municipality took an overly active role in founding an association, the municipality was seen as responsible for financing and organizing the association, instead of the members through their usage and voluntary engagement. In the long-term this isn't financially or politically stable as carsharing then depends on the good-will of the current mayor, unless carsharing becomes recognized as part of public transport. Thence, the currently more realistic recommendation is to provide small-scale support for founding associations through providing parking spaces, official meeting rooms, templates for official documents, support in accounting and bureaucratic acts, some initial funding if necessary and a network with

other associations in the region. Most importantly, however, local politicians should recognize that carsharing is possible in small and rural municipalities, encourage citizens to take initiative and provide a good example by using carsharing as municipality. This should further be supported by the federal and state governments spreading political awareness for this part of the mobility transition to regions lacking local initiative and knowledge. Fortunately, there are already examples of how this can be done, e.g. Loose (2018), van den Dool *et al.* (2018) and Enoch and Taylor (2006).

By taking the concerns and willingness of active citizens to contribute to a socio-ecological mobility transition seriously, municipalities and regional governments can not only alleviate transport problems, but also foster social cohesion within their municipality. However, it is important to not fall into a neoliberal parlance of responsibility, as the collective problems of automobility cannot and should not be solved solely by citizen action. The means and responsibility to foster a socio-ecological mobility transition through regulation are on the traditional political level. Supporting citizens to found carsharing associations is no excuse for political inaction, put has to go hand in hand with changes on the structural level. In the best case non-commercial carsharing and structural changes can mutually reinforce each other, while in the worst case the continued existence of hegemonic automobility thwarts any bottom-up and citizen-based initiatives.

One active and local form of fostering non-commercial carsharing is to make carsharing mandatory in new housing developments. In some municipalities the carsharing associations are starting to place cars in new housing developments, which are usable by all residents, independent from their association membership. For maintaining and managing the cars the associations get reimbursed by the housing developer or the municipality. This allows residents to access carsharing with the same comfort as a potential private car, increasing the likelihood of testing and adopting carsharing as alternative to the privately owned car.

A more general and long-term strategy for fostering carsharing, commercial and non-commercial alike, are measures for the reduction of car-dependency. Far from being a new policy recommendation, (Gorham 2002, Newman and Kenworthy 2015) my work rather shows the importance and effectiveness of this strategy also in rural municipalities. The carsharers in this study don't rely on the car for commuting and grocery shopping, which sparked the impression of inefficiency of the privately owned car and often was an entry point for carsharing. However, this requires a high quality of public transport to work places and close-by shopping facilities reachable by bicycle. Carsharing should thence be understood as an addition to or even part of public transport, filling its gaps, e.g. between municipalities without sufficient public transport. Therefore, (non-commercial) carsharing in its stationary form, independent from its ownership relations, could and should be perceived as a form of public transport, which requires corresponding political attention and support. While this potentially decreases citizen involvement in carsharing, subsidizing carsharing associations as public transport is the best way to ensure their continued existence.

Hence, fostering (non-commercial) carsharing works best locally through municipal and regional governments which support and stimulate citizen initiatives for starting carsharing. Additionally, carsharing benefits from the same measures which also reduce car-dependency and in its stationary form should be conceived as a form of public transport requiring corresponding political attention.

3 Outlook: Future research and lessons learnt

This last section delineates avenues for future research and summarizes the lessons learnt. The empirical object I studied in this work, non-commercial carsharing, is rarely found to be a topic in transport and mobilities research. While there is valuable research on informal modes of transport, this is often situated in the Global South and while often in tension with formal modes of transport, their significance for providing livelihoods clashes with the perspective of non-commerciality adopted here. (Cervero and Golub 2007, Lovejoy and Handy 2011, Rizzo 2011, Agbiboa 2016, Guerra *et al.* 2017, Evans *et al.* 2018) On the other hand, research on transport in the Global North is mostly concerned with either individual or commercialized modes of transport. (Schwedes *et al.* 2016) During my literature review and the preparation of this work, I could only find one publication concerned in-depth with a form of carsharing within the boundaries of my definition of non-commercial carsharing. (Newman 2016) Additionally, while the adoption of qualitative methods and critical theory in transport and mobilities research is becoming more frequent since the emergence of the *mobilities paradigm*, research on carsharing is dominated by quantitative research from traditional transport planning and engineering. (Kębłowski and Bassens 2017, Ferrero *et al.* 2018) Lastly, the outspoken adherence to Critical Realism and its methodological implications, albeit far from unique, isn't overly common in transport and mobilities research. Therefore, regarding transport and mobilities research this study enters fairly new territory. Though nevertheless benefiting from existing research, my work is decisively explorative as it sheds light on a rarely investigated form of organizing movement and brings the mobilities literature in conversation with Critical Theory and Critical Realism to chart their interrelations with processes of changing mobilities through everyday resistance, re-embedding and commoning.

Due to the explorative nature of this study many avenues for future research are opened up. I already raised the first when discussing non-commercial carsharing with the concept of everyday resistance. There is theoretical and empirical research needed into the relation between everyday resistance, small scale collective organization and community, which could take its starting point in a thorough investigation of the collective and relational character of everyday practices.

Second, I investigated non-commercial carsharing within a specific region and therefore my arguments are also based on the socio-spatial context of this region. Thence, another avenue for further research is to study carsharing associations and private carsharing arrangements in other socio-spatial and socio-demographic contexts. Are the processes and tendencies I identified in this study exercised differently in

different contexts, are they exercised at all or do they remain unrealized? For examining the practical role and potential of non-commercial carsharing in fostering a socio-ecological mobility transition, these are extremely relevant questions that require more qualitative research on non-commercial forms of sharing mobilities. The only other in-depth study on non-commercial carsharing I found in the literature by Newman (2016) on *Talybont* in Wales and a report on car clubs in the UK from 2002, (Bonsall *et al.* 2002) make similar claims, wherefore more research on non-commercial carsharing is promising for outlining pathways towards a socio-ecological mobility transition.

Third, further research could go into investigating the tendencies and processes outlined for my case of non-commercial carsharing in other sharing mobilities, e.g. commercial stationary carsharing, commercial free-floating carsharing, bikesharing, etc. How is collective ownership expressed and perceived in these commercialized sharing mobilities? Are processes of social or ecological re-embedding taking place? As already outlined the aspects of commoning mobility (Nikolaeva *et al.* 2019) can provide a starting point for this investigating as well as the concept of re-embedding on the level of everyday life I developed further in this study. Answering these questions is relevant for assessing the cumulative impacts of sharing mobilities and can inform the struggle for their emancipatory implementation. (Schor 2014, Richardson 2015) Furthermore, this research could also investigate the interrelation of non-commercial carsharing with other sharing mobilities and aspects of the mobility transition in order to concretize policies, regulations, initiatives and actions needed for a successful move towards a socio-ecological just mobilities future. (Spurling 2020)

The next avenues for future research are more conceptual and concerned with the influences that cause the change of hegemonic practices in general and automobility in specific, the connection between re-embedding on the micro and macro level and the interplay between altering everyday practices and processes of change.

Researching the influences and reasons for adopting non-commercial carsharing as alternative to hegemonic practices of automobility was a decisive part of this study. Their investigation yielded the interesting result that for the carsharers in this study environmental concerns and issues, in contrast to most literature on carsharing, played a decisive role for adopting carsharing. (Hartl *et al.* 2018) My applied method and methodology follows an approach of recognizing people as 'sentient beings', an in-depth analysis of reasoning and a processual-understanding of causality, supporting a different understanding of motivation than quantitative research based on stated-preference surveys and marketing methods. (Sayer 2011, Maxwell 2012) Therefore, the shifted emphasis could be rooted methodologically, but could also originate in the socio-demographic composition of my sample, my positionality or a combination of these. For further spreading and promoting carsharing in general and non-commercial carsharing in specific, understanding why people adopt carsharing in the first place is an important topic. This should be researched further using process-based and qualitative research methods, to reach a deeper understanding of the interrelations

between meanings, attitudes, identities and subjectivities and their role in altering everyday mobility practices and related mobility cultures.

A fifth topic for future research could be the concept of re-embedding as I developed it further in this study. Re-embedding as counter-movement against dis-embedding has already been applied to research on social movements, however rather on a conceptual and macro level. In this work I used re-embedding on the level of everyday level and extended it with an additional meaning of contextualization that has also been used before, but rather independently from its other meaning. Bringing these together enables to focus on individual processes of re-embedding. Yet, further research is needed on these individual processes of re-embedding and how they connect to processes of re-embedding on the macro level. In this study the concept of commoning provided this connection, but for a thorough understanding of processes of change in general and re-embedding in specific further ways of connecting micro and macro processes of re-embedding should be researched.

The sixth and last avenue for future research I outline is the relationship between altering (everyday) practices and change. In this study I followed the methodological model of the TMSA, which suggests (everyday) practices as an important lever for changing social structures and their reproduction through the individual. (Collier 1994, Joseph 2002, 2003, Shove *et al.* 2012) I further used everyday resistance as analytical framework for investigating how everyday practices are altered and complemented it with two further conceptualizations for altering everyday practices, re-embedding and commoning. However, I don't take this to be the only or necessarily the most effective way of how societal change can take place. This study didn't provide the time and space for a discussion and comparison of different models of change and their blind-spots and merits, such as the multi-level-perspective or others. (Geels *et al.* 2012, Tyfield 2014, Temenos *et al.* 2017) The TMSA certainly offers to investigate and conceptualize the less trodden path of societal change through bottom-up collective action, however much research is needed to understand the interplay of society, individuals and practices, its components beyond processes of everyday resistance, commoning and re-embedding, their interrelations and the challenges and hurdles of this pathway for societal change. While this is on one side a theoretical task, the most interesting and relevant task is the scientific and empirical investigation of processes of change over time. This study was only able to provide a snapshot of this process and depends on people's stories for accessing the full process of change. I could only sketch how identities and subjectivities relate to altering practices and emerging mobility cultures and lastly to broader processes of change. However, for a fuller picture of the process of change and a more accurate understanding of mechanisms and tendencies at work, change needs to be investigated over time and with mixed-methods approaches to also capture the societal and structural level empirically.

Despite all the questions that my study of non-commercial carsharing raises, there is much to learn from it to inform future research on its answers. I again stress, that in direct relation to the empirical object, my

work charts mostly unknown territory. Due to its quantitative marginality in terms of operated carsharing cars, non-commercial carsharing didn't get much attention by transport and mobilities research. However, carsharing associations and private carsharing arrangements are special, so to say 'extreme', cases of carsharing and sharing mobilities. (Flyvbjerg 2006) The non-profit nature of non-commercial carsharing reduces the presence of mechanisms and tendencies in relation to economic profit-maximization which allows a deep insight into other processes and tendencies present and exercised within carsharing in specific and sharing in general. While their presence in other cases can only be investigated empirically, from a methodological standpoint I argue, that these are present, but overridden by the mechanisms and tendencies of profit-maximization. Thence, with this study on non-commercial carsharing I make a contribution to understand how *"deep cuts in carbon use in transport are inextricably linked to such issues as the organisation of contemporary societies, the role of transport therein, justice and ethics."* (Schwanen *et al.* 2011, p. 1004)

The capitalist accumulation process inherently depends on the commodification of entities that are not commodities such as humans and nature (Polanyi 2001) and through this commodification subjugates and lastly destroys them: *"Capitalist production, therefore, only develops the techniques and the degree of combination of the social process of production by simultaneously undermining the original sources of all wealth – the soil and the worker."* (Marx 1990, p. 638) In this work I illustrated how the linkage between capitalist profit maximization and mobilities is hindering a socio-ecological mobility transition, by providing an example in which this linkage is alleviated and a socio-ecological mobility transition actually takes shape. (Newman 2013, Schwedes 2017, Waygood *et al.* 2019, Mattioli *et al.* 2020) This is not necessarily to say that a socio-ecological mobility transition is impossible within a capitalist framework, but that a socio-ecological mobility transition is more likely to emerge from post- or beyond-capitalist spaces, practices, identities, rationalities and cultures as they are embedded in practices of non-commercial carsharing. (Gibson-Graham 2006, Wright 2010, Urry 2016, Yaka 2019)

Through departing from the rational of profit-maximization and accumulation, non-commercial carsharing, hence, gives an insight into how a socio-ecological mobility system could look like. This, however stands in stark contrast to common discourses on sustainable mobility and the mobility transition outlined above, making it politically and societally highly relevant as emancipatory option for changing mobilities. Of the many contrasts and takeaway messages of this 'real utopia' (Wright 2010) of sustainable mobility I want to point out three essential ones as a final conclusion of this work:

1) Studying non-commercial carsharing has shown that the ongoing and escalating ecological and climate crisis can act as central concerns and reasons for the emergence of alternative and counter-hegemonic practices, meanings, identities and cultures. Comparing the effects and stability of non-commercial carsharing with more novel forms of carsharing, a motivation grounded in ecological

concerns also facilitates more profound and long-term changes in everyday practices and meanings of automobility and alternative mobility cultures.

2) Non-commercial carsharing is based on relatively simple technologies. This challenges the techno-centric perspective on sustainable mobility by showing that a socio-ecological mobility transition is conceivable with existing technologies. This in turn highlights, that for making currently unsustainable mobilities more sustainable it isn't necessary to develop smart and innovative technologies and their future markets but to change the practices and meanings of their everyday application.

3) Altering practices and meanings of everyday automobility and their translation into changing the social relations that reproduce society through the individual is a decidedly common and collective task. No individual consumer, CEO or head of state can single-handedly change social relations and their realization in everyday life. Rather, altering everyday practices and meanings requires to repeatedly and collectively 'make a difference', mobilizing social relations in order to change how social structures are reproduced individually.

Taken together, non-commercial carsharing combines the ecological benefits of sharing cars with the social benefits of sharing ownership. It saves resources and greenhouse gas emissions while fostering social cohesion and communication in local communities, providing a socio-ecological way of organizing automobility. Thus, non-commercial carsharing emphasizes a socio-ecological alternative for the use and ownership of cars and articulates a practical critique and contestation of the current capitalist mobilities system. Through collectively altering hegemonic practices of automobility non-commercial carsharing is becoming a vehicle for resistance in everyday life, challenging how capitalist mobilities are reproduced by and through the individual, opening a potential pathway beyond the system of automobility and towards a socio-ecological just and post-capitalist mobility transition.

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Appendix

1 Interview guide

Associations

The interview guide for the associations was revised eight times in total. Revisions were minor regarding the wording of some question, the adding of one or two questions or the order of the themes. The general structure of the guide was the same during all interviews. Questions were only asked if not answered in a previous question. The version printed in table 0.1 is a translation into English of the final version.

Table 0.1: Translated interview guide for members of the carsharing associations.

Theme	What do I want to know?	Question
Introduction	How did the idea originate?	How did you become a member in the association? -> Ask for decision process / When was it thought about
	Experiences with carsharing	When did you first get in contact with carsharing in general and the association in specific?
Effects	Mobility behavior	How do you move in your everyday life? / How do you decide which mode of transport you use?
	Change in everyday organization	How do you organize your everyday life? / How did that change since you are practicing carsharing?
	Other parts of life	How did carsharing influence other parts of your life outside of the everyday? (family, friends, vacation, leisure)
	Attitude towards sharing in general?	Are you sharing something else than the car? / Are you also using other forms of sharing? (Other carsharing, bikesharing, Airbnb, Couchsurfing, nebenan.de, etc.)
	Building or extension of social network	Are there shared activities besides sharing a car? / How is the relationship within and with the association? How did the relationship develop over time? / Can you tell me about the last meeting with the association?
Worldview	Social environment	How did your private environment react to you carsharing? -> Did a negative reaction make you think about carsharing again?
	Socialization	How was mobility in your childhood and youth?
	Mobility of the future	How do you imagine your mobility in the future?
	Understanding of mobility	What is important to you when you move? / What role does mobility play for you? / Why is it that you are moving?

	General worldview (Politics, society, environment)	How do you think does carsharing fit into the larger societal context?
Reasons & motivation	Pick up answers from earlier questions	You mentioned before that… // What caused you not owning a car? What is important to you when sharing a car?
	Role of the association	Would you switch to another carsharing model?
	Economic	Did you own a private car before? -> If yes, why not anymore? If no, why not?
	Organizational	How do you use the car in everyday life? / What does the association structure mean to you?
	Political	What are the benefits of sharing a car in an association?
	Ecological	What are the benefits of sharing a car in an association? / What role do environmental factors play?
	Favoring/hindering circumstances	How was your decision to share a car favored/hindered?
How does carsharing work?	What are the modalities and characteristics	How long do you use the car?; How often do you use the car?; What do you use the car for?; Which car do you use?
	Role of the car	What do you use the car for? In which circumstances do you use the car?
		Can you describe the last time you used carsharing?
		Can you describe a typical situation in which you used carsharing?
	Use of technology	How does the usage work from on the technological side? Are you satisfied with that?
	Conflicts	Can you describe problems of carsharing?
		What was the last conflict when using a carsharing car?
		Can you describe a (hypothetical) bad/ideal experience?

Interview guide Karl (Vaterstetten)

Due to Karl's special position in the carsharing associations in the region I used a different interview guide for the interview with him. The questions in table 0.2 are also translated from German.

Table 0.2: Translated interview guide for interview with Karl from Vaterstetten.

Questions
1. When was the first time you heard about carsharing?
2. How did the founding of the association in Vaterstetten come into place?
3. How did the spreading of the association model in region take place?
4. What are the benefits of sharing cars in an association?
a. How are the associations organized? How is the association in Vaterstetten organized?
5. How was the development from a technical perspective?
a. How does it work? (from a user and organizational perspective)
6. What is the current situation of the carsharing associations in and around Munich?
a. How many associations with how many members?
b. Geographical distribution?
c. Problems and challenges?
d. Further spreading?
7. What are favoring and hindering circumstances for the carsharing associations on a structural level?
a. Why didn't associations develop in more urban regions?
b. What are favoring and hindering circumstances on a personal level?
8. What role does mobility play for you?
9. What are your personal reasons for doing carsharing in associations?
10. How does carsharing fit in the larger societal context?
11. How do you imagine the future of the carsharing associations?
Ask if it isn't mentioned during the interview:
- Community building and member engagement
- Clientele
- Other organizational forms, e.g. cooperatives, private companies
- Comparison with commercial models regarding economic, ecological, social and political issues

Private sharing arrangements

The interview guide for the private sharing arrangements is similar to the association interview guide, mainly differing in regard to how sharing works. Also the guide for the private sharing arrangements was revised regularly, seven times in total. The printed version here in table 0.3 is a translation into English of the final version.

Table 0.3: Translated interview guide for the participants in private carsharing arrangements.

Theme	What do I want to know	Question
	How did the idea originate?	How did your private carsharing develop?
		When did you think about sharing a car for the first time?
		When was the first time you heard about carsharing?
Effects	Mobility behavior	How do you move in your everyday life? / How do you decide which mode of transport you use?
	Change in everyday organization	How did that change since you are practicing carsharing?
	Building or extension of social network	How did you get to know the people you are sharing a car with? Are there shared activities besides sharing a car? / How did the relationship within the group develop over time?
	Other parts of life	How did carsharing influence other parts of your life outside of the everyday? (family, friends, vacation, leisure)
	Attitude towards sharing in general?	Are you sharing something else than the car? / Are you also using other forms of sharing? (Other carsharing, bikesharing, Airbnb, Couchsurfing, nebenan.de, etc.)
Worldview	Social environment	How did your private environment react to you carsharing?
	Socialization	How was mobility in your childhood and youth?
	Role of the car	What do you use the car for? Under which circumstances do you use the car?
	Mobility of the future	How do you imagine your mobility in the future?
	Understanding of mobility	What is important to you when you move? / What role does mobility play for you?

	General worldview (Politics, society, environment)	How do you think does carsharing fit into the larger societal context?
Reasons & motivation	Pick up answers from earlier questions	What motivated you to privately share a car?
		Why don't you have a private car?
	Economic	Did you own a private car before? -> If yes, why not anymore? If no, why not?
	Organizational/pragmatic	How do you use the car in everyday life? -> If not already talked about sufficiently
	Political	What are the benefits of privately sharing a car? What is the role of independence?
	Ecological	What are the benefits of privately sharing a car? / What role do environmental factors play?
	Favoring/hindering circumstances	How was your decision to privately share a car favored/hindered?
How does carsharing work?	What are the modalities and characteristics	With whom do you share the car? How long do you use the car?; How often do you use the car?; What do you use the car for?
		Can you describe the last time you used the private carsharing car?
		Can you describe a typical situation in which you use the carsharing car?
	Cost sharing	How did you regulate sharing the costs, e.g. insurance, fueling?
	Use of technology	How do you organize the usage?
	Conflicts	Can you describe problems of carsharing?
		What was the last conflict when using a carsharing car?
		Can you describe a (hypothetical) bad/ideal experience?

2   Flyer

Figure 0.1 shows the flyer that was distributed in neighborhood meeting locations and other locations across Munich. The translation is as follows:

Call for interviewees!

You share a car?

Tell me about it! For my PhD, I am searching people and groups, who are sharing a car, a cargobike or other vehicles. I am interested in your personal experiences with it:

- Why do you share a vehicle?

- How does sharing function?

- What are benefits and what are problems?

Figure 0.1: Flyer for finding interviewees in private carsharing arrangements.

3 Theoretical codes

Table 0.4 shows all 70 theoretical codes in the eleven categories in up to two sub-levels and the number of codings for each theoretical code.

Table 0.4: Theoretical codes and respective codings.

Theoretical code	Number of codings
Mobility politics	14
Local politics	31
Uneven mobilities	13
Im/mobilities	6
Temporal	3
Spatial	6
Communication	29
Decision-making	20
Technology	25
Critique	37
Critique on personal level	31
Systemic critique	44
Financial aspects	85
Efficiency	17
Environment	93
Role of the car	46
Caring for the car (relationship car & owner)	38
The car as object of critique	44
The car as enabler	64
System of automobility	33
The car as emotional object	36
Mobility is…	25
Forced mobility	14
Leisure	36
Necessity	31
Freedom	44
Need satisfier	4
Commoning mobility	19
Commoning practice	20
Commoning meaning	11
Commoning movement	16
Enclosures	10
CS as social project & practice	28
CS fostering social cohesion	11
Ownership	25

	Charging the car with community	22
	Shared ownership	32
Sharing the car		52
	Problems	43
Everyday Resistance		4
Individualization		35
Redefining hegemonic practices		44
	Changing mobility habits	72
	Using the car differently	45
	Using the car less	55
	Car as status symbol/luxury good	44
	Car as use value	58
Change		43
'De-ideologization'		32
Non-commercial CS and change		46
Bottom-up transformation		23
Agency		46
	Active vs. Conscious	23
	Meanings	18
	Values	44
Structure		48
	Infrastructure	28
	Forced mobility	13
Collective Action		38
Community & relationship		88
Boundaries		49
Purpose community		26
Trust		30
Reciprocity		38
Control		18
Rules		53
Responsibility		43
Solidarity		33
Similarity		40
Contiguity		44